

NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

NEVADA ENVIRONMENTAL COMMISSION

HEARING ARCHIVE

FOR THE HEARING OF March 6, 1997

HELD AT: Las Vegas, Nevada

TYPE OF HEARING:

YES	REGULATORY
	APPEAL
	FIELD TRIP
	ENFORCEMENT
	VARIANCE

RECORDS CONTAINED IN THIS FILE INCLUDE:

YES	AGENDA
YES	PUBLIC NOTICE
YES	MINUTES OF THE HEARING
YES	LISTING OF EXHIBITS

NEVADA STATE ENVIRONMENTAL COMMISSION

A G E N D A

MARCH 6, 1997

10:00 A.M.

MEETING LOCATION

Clark County Commission Chambers
500 South Central Grand Parkway, Las Vegas, Nevada.

This agenda has been posted at the Grant Sawyer State Office Building and Clark County Commission Chambers in Las Vegas; the Washoe County Library in Reno; and the Nevada State Library and Division of Environmental Protection Office in Carson City. The Public Notice for this hearing was published on February 4, February 5, February 12, and February 20, 1997, in the Las Vegas Review Journal and Reno Gazette Journal Newspapers.

The following items will be discussed and acted upon but may be taken in different order to accommodate the interest and time of the persons attending.

I. Approval of minutes from the October 22, 1996 meeting. * ACTION

II. Regulatory Petitions * ACTION

- A. Petition 96019** is a temporary regulation amending NAC 486A.010 through 486A.250. The proposed regulation clarifies definitions, and revises the year-by-year compliance schedule for acquiring or converting public fleet vehicles to alternative fueled vehicles. The credit program in NAC 486A.170 is repealed. A new section is added that exempts from program requirements counties with less than 100,000 persons. NAC 486A.180 expands reporting.
- B. Petition 96020** is a temporary regulation that amends Section 23 of Petition 96018 (LCB R-119-96) by amending the reference to Method E1739-95 as adopted by the American Society of Testing and Materials to be obtained from the Society directly rather than the Division of Environmental Protection. This proposed changes includes the address and cost of acquiring the document "Method E1739-95".
- C. Petition 97001** temporarily amends NAC 444 to allow solid waste management agencies to apply less stringent standards at Class II municipal solid waste landfills. The proposed regulation amends NAC 444.667 regarding control of explosive gases, NAC 444.716 regarding the daily covering of landfills, and NAC 444.7175 regarding final landfill coverings. The proposed changes provides for more flexibility in establishing monitoring schedules required by the aforementioned citations. NAC 444.685 through 444.6859 is proposed to be amended by adding two new assurance mechanisms; the local government financial test and the local government guarantee.

III. Settlement Agreements on Air Quality Violations * ACTION

- A.** Rees's Enterprise: Notice of Alleged Violation # 1214 & 1215
- B.** Frehner Construction Company: Notice of Alleged Violation # 1209, 1210 & 1213
- C.** Capital Aggregate Products Inc.: Notice of Alleged Violation # 1220

IV. Discussion Items

- A. Update on Pending Legislation of the 1997 Session
- B. General Commission or Public Comment

V. Workshop on Cryptosporidiosis and the Las Vegas Bay

The Commission will hear informational presentation on the water quality of the Las Vegas Bay and how cryptosporidiosis impacts drinking water from the water supply intake from the Southern Nevada Water Authorities Lake Mead facilities and the impact of the Bay upon carp endocrine systems.

VI. Field Trip to Las Vegas Bay and Saddle Mountain

Following the regular hearing the Commission will conduct a field trip from the Las Vegas Wash to the Las Vegas Bay and Saddle Mountain intake on Lake Mead. Depending upon the weather conditions, the Commission will be taking a boat to visually inspect the two aforesaid locations. The Commission will embark from the Las Vegas Wash Marina and disembark at the Lake Mead Marina, adjacent to Saddle Island. If enough time is available, the Commission will tour the Southern Nevada Water Authorities Saddle Mountain Treatment and Transmission Facility. If a boat tour is to occur, the public must provide their own water transportation on Lake Mead. Boat concessionaires are available for the public. The Commission will not provide water borne or surface transportation for the public. Members of the public who wish to join the field trip will need to inform the Commission by 5:00 p.m., Wednesday, February 26, 1997.

IMPORTANT:

Windy and cold conditions may prevail on the lake. Field trip participants should come prepared with warm jackets, gloves, hats or scarves and proper rubber-soled foot wear.

Persons with disabilities who require special accommodations or assistance at the meeting are requested to notify David Cowperthwaite, Executive Secretary in writing at the Nevada State Environmental Commission, 333 West Nye Lane, Room 104, Carson City, Nevada, 89706-0866 or by calling (702) 687-4670 no later than 5:00 p.m., February 26, 1997.

NEVADA STATE ENVIRONMENTAL COMMISSION NOTICE OF PUBLIC HEARING

The Nevada State Environmental Commission will hold a public hearing beginning **10:00 a.m. on Thursday, March 6, 1997**, at the Clark County Commission Chambers located at 500 South Grand Central Parkway (Clark County Complex), **Las Vegas**, Nevada.

The purpose of the hearing is to receive comments from all interested persons regarding the adoption, amendment, or repeal of regulations. If no person directly affected by the proposed action appears to request time to make an oral presentation, the State Environmental Commission may proceed immediately to act upon any written submission.

- 1. Petition 96019** is a temporary regulation amending NAC 486A.010 through 486A.250. The proposed regulation clarifies definitions, and revises the year-by-year compliance schedule for acquiring or converting public fleet vehicles to alternative fueled vehicles. The credit program in NAC 486A.170 is repealed. A new section is added that exempts from program requirements counties with less than 100,000 persons. NAC 486A.180 expands reporting.

There will be no anticipated adverse economic impact to businesses in the short or long term. The proposed regulatory changes will not have a short and long term beneficial economic impact upon businesses. Public agencies will experience a short and long beneficial economic impact since the regulation revises the year by year schedule for acquiring or converting public fleet vehicles to alternative fuels. There is no additional cost to the agency for enforcement. There are no other state or government agency regulations which the proposed amendments duplicate. This regulation does not impose a new fee or increase an existing fee.

- 2. Petition 96020** is a temporary regulation that amends Section 23 of Petition 96018 (LCB R-119-96) by amending the reference to Method E1739-95 as adopted by the American Society of Testing and Materials to be obtained from the Society directly rather than the Division of Environmental Protection. This proposed changes includes the address and cost of acquiring the document "Method E1739-95".

There will be no anticipated adverse economic impact to businesses in the short or long term. The proposed regulatory changes have neither a short or a long term beneficial effect on business. The public should not experience any short or long term economic adverse impact. There is no additional cost to the agency for enforcement. There are no other state or government agency regulations which the proposed amendments duplicate. This regulation does not impose a new fee or increase an existing fee.

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- Petition 97001** temporarily amends NAC 444 to allow solid waste management agencies to apply less stringent standards at Class II municipal solid waste landfills. The proposed regulation amends NAC 444.667 regarding control of explosive gases, NAC 444.716 regarding the daily covering of landfills, and NAC 444.7175 regarding final landfill coverings. The proposed changes provides for more flexibility in establishing monitoring schedules required by the aforementioned citations. NAC 444.685 through 444.6859 is proposed to be amended by adding two new assurance mechanisms; the local government financial test and the local government guarantee.

There may be a modest beneficial effect accruing to both private businesses and for the public located in rural areas of Nevada due to potential reductions in the costs for construction and operation of some rural municipal solid waste landfills. The public should not experience any short or long term economic adverse impact. There is no additional cost to the agency for enforcement. There are no other state or government agency regulations which the proposed amendments duplicate. This regulation does not impose a new fee or increase an existing fee.

Pursuant to NRS 233B.0603(c) the provisions of NRS 233B.064 (2) is hereby provided:

"Upon adoption of any regulation, the agency, if requested to do so by an interested person, either prior to adoption or within 30 days thereafter, shall issue a concise statement of the principal reasons for and against its adoption, and incorporation therein its reason for overruling the consideration urged against its adoption".

Persons wishing to comment upon the proposed regulation changes may appear at the scheduled public hearing or may address their comments, data, views or arguments, in written form, to the Environmental Commission, 333 West Nye Lane, Carson City, Nevada. Written submissions must be received at least 5 days before the scheduled public hearing.

A copy of the regulations to be adopted or amended will be on file at the State Library, 100 Stewart Street and the Division of Environmental Protection, 333 West Nye Lane - Room 128, in Carson City; and at the Division of Environmental Protection, 555 E. Washington - Suite 4300 for inspection by members of the public during business hours. In addition, copies of the regulations and public notice have been deposited at major library branches in each county in Nevada. Listed below are the locations where the public notice and regulations will be available for inspection and copying:

Carson City Library, 900 North Roop Street, Carson City;
Churchill County Library, 553 South Maine Street, Fallon;
Las Vegas Library, 833 Las Vegas Blvd. North, Las Vegas;
Douglas County Library, 1625 Library Lane, Minden;
Elko County Library, 720 Court Street, Elko;
Goldfield Public Library, Fourth & Crook Streets, Goldfield;
Eureka Branch Library, 10190 Monroe Street, Eureka;
Humboldt County Library, 85 East 5th Street, Winnemucca;

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Battle Mountain Branch Library, 625 Broad Street, Battle Mountain;
Lincoln County Library, 93 Main Street, Pioche;
Lyon County Library, 20 Nevin Way, Yerington;
Mineral County Library, First & A Street, Hawthorne;
Tonopah Public Library, 171 Central Street, Tonopah;
Pershing County Library, 1125 Central Avenue, Lovelock;
Storey County Library, 95 South R Street, Virginia City;
Washoe County Library, 301 South Center Street, Reno;
White Pine County Library, 950 Campton Street, Ely.

Additional copies of the regulations to be adopted or amended will be available at the Division of Environmental Protection for inspection and copying by the members of the public during business hours. Copies will also be mailed to members of the public upon request. A reasonable fee may be charged for copies if it is deemed necessary.

Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to notify the Executive Secretary in writing, Nevada State Environmental Commission, 333 West Nye Lane, Room 128, Carson City, Nevada, 89701, facsimile (702) 687-5856, or by calling (702) 687-4670 Extension 3118, no later than 5:00 p.m. on **February 27, 1996**.

This public notice has been posted at the following locations: Clark County Public Library, the Clark County Commission Chambers and Grant Sawyer Office Building in Las Vegas; Washoe County Library in Reno; Division of Environmental Protection and State Library in Carson City.

STATE ENVIRONMENTAL COMMISSION
Meeting of March 6, 1997
Clark County Commission Chambers - Las Vegas, Nevada
Adopted Minutes

MEMBERS PRESENT:

Melvin Close, Chairman
William Molini, Vice Chairman
Mark Doppe
Paul Iverson
Marla Griswold
Michael Turnipseed
Roy Trenoweth
Fred Gifford
Joseph Tangredi
Robert Jones

MEMBERS ABSENT:

Russell Fields

Staff Present:

Jean Mischel- Deputy Attorney General
David Cowperthwaite - Executive Secretary
LuElla Rogers - Recording Secretary

Chairman Close called the meeting to order at 10:00 a.m. and read the public notice posting requirements as defined in the agenda for March 6, 1997.

Chairman Close moved to **Agenda Item I - Approval of minutes from the October 22, 1996 meeting:**

Commissioner Jones moved for approval of the minutes as written.

Commissioner Griswold seconded the motion.

The motion carried.

Chairman Close moved to **Agenda Item II - Regulatory Petitions**

- A. Petition 96019**, a temporary regulation amending NAC 486A.010 through 486A.250. The proposed regulation clarifies definitions, and revises the year-by-year compliance schedule for acquiring or converting public fleet vehicles to alternative fueled vehicles. The credit program in NAC 486A.170 is repealed. A new section is added that exempts from program requirements counties with less than 100,000 persons. NAC 486A.180 expands reporting.

Ed Glick, Nevada Division of Environmental Protection (NDEP), Bureau of Air Quality, Mobile Source Section, explained the changes requested in petition 96019 basically:

- 1) Finish aligning our regulation with the NRS intent
- 2) Reflect changes desired by participants in Washoe and Clark County to make the regulation more workable for them and more user friendly.

Mr. Glick reviewed the changes:

"Clean" designation for alternative fuels is being dropped to reduce confusion between the regulation and the NRS. NRS does not use the adjective "clean", just "alternative fuel".

Section 1 - 486A.030: Removes "established by California Air Resource Board" to be explained when we discuss 486A.150.

Section 2 - 486A.040: Removes the word "clean" and adds "as defined by NRS 486A.060".

Section 3 - 486A.060: The definition of fleet in this regulation was different than the NRS and used the adjective "covered" which we removed throughout the rest of the text.

Section 4 - 486A.140: Amended to remove the adjective "clean".

Section 5 - 486A.150: Amended to reflect a request by stakeholders that some of the California Air Resources Board (CARB) approval of kits is very in-depth and expensive so they are behind on certifying kits. The request was to allow not only CARB approved kits but also kits approved by the U.S. EPA. This allows flexibility to obtain vehicle conversion kits in a more timely manner.

Section 6 - 486A.160: Contains adjective clean-up and the compliance schedule. When we met with stakeholders we learned they were having trouble meeting the acquisition schedule established because vehicles or conversion kits were not available and we decided at that point to adopt the Department of Energy (DOE) schedule which was a 1-year offset. Subsequently, the DOE changed their schedule to a 2-year offset because of an administrative error, they are required to have their rules out 18 months ahead of time but they missed that deadline. We had subsequent discussion with the same stakeholders and present to you now Exhibit 1, a proposed amendment to the petition that puts the schedule back only 1 year. Instead of 10% in 1997 it shows 10% in 1996, giving some relief to people experiencing trouble acquiring original equipment manufacture (OEM) vehicles or conversion kits. This change should not substantially damage other programs whereas a 2-year delay might damage some existing programs.

Section 6, item 2: More adjective deletion and we a language change. Delete "increased to the next" and add "rounded off to the nearest" whole number. With the old schedule if you bought one vehicle even though it was only .5% you had to buy, it had to be rounded up so that one vehicle had to be alternative fuel and that would continue on from 1 to 10 - you would have to buy one. With our amendment, a standard round off at 5.5, a vehicle would not have to be purchased until 5 new vehicles were purchased, then you would have to buy one. Some agencies can only afford one vehicle and the alternative fuel does not suit their needs at this point. As we get to 25% and 50% the difference is much more minimal.

Section 7 - 486A.180 Amended to make adjective changes and we deleted #3 that required reporting of clean alternative fuel use to the division by the end of each month and required an explanation of why fuel used during the last 30 days was not clean alternative fuel. Many dual-fueled vehicles have limited range so there would be more occasions where clean alternative fuel would not be used resulting in approximately 1200 reports a month stating why they did not use clean alternative fuels. We felt that was a burdensome request and both Washoe and Clark Counties agreed. In new #3 we add that the fleets report to us specifically the purchase of new vehicles and alternative fueled vehicles which had not previously been a requirement so that allows us to track their compliance. Also, every year we can inspect their fuel usage report and at that time we can discuss with them why the alternative fuel usage is not increasing. That would eliminate the need for individual reports on a monthly basis. Section 8 - 486A.190 Adjective changes.

Section 9 - 486A.200 Adjective changes and delete #, "that the director may exempt an emergency vehicle from the requirements of NAC 486A.010 to 486A.240, inclusive, if good cause is shown for the exemption. The applicant seeking an exemption must demonstrate why the emergency vehicle cannot operate on clean alternative fuel". NRS states that all vehicles exempted by the federal government or agencies are also exempt from our regulations. This basically was a conflict because both the Clean Air Act and the DOE schedule show all police and emergency vehicles are exempt from the federal regulations so therefore, by legislative intent, they would be exempt from ours. We felt it would be a burdensome requirement to ask them to prove this exemption when it is already granted.

Section 10 - 486A.210 cleans up adjectives.

Section 11 - 486A.220 deletes adjectives and in #3 (b) we removed the language "of fuel use".

Section 12 - We add new language because of the change in definition of fleet which had our applicability. We separated applicability into this Section 12 to align with the NRS definition of applicability.

#2 of Section 12 incorporates the language "Any governmental agency exempted by federal statute or regulation" which goes back to what we discussed on the emergency vehicles.

NAC 486A.050, 486A.070 and 486A.170 are being deleted.

486A.050, "Commission" defined is redundant language.

486A.070 "Credit" defined is being deleted because of the deletion of NAC 486A.170, probably the most talked about section. The credits were designed to reward government agencies for having alternative fueled vehicles, buying more than was required. We previously came before the Commission because of the demand by NRS to have RFG and low-sulfur diesel as an alternative fuel but that put us into difficulty with the credit system because that would mean people operating diesel vehicles would instantly acquire quite a few credits and the people who spent money on some of the alternative fuels (natural gas and almost anything other than a petroleum product) would virtually not get any more credit than the people who did nothing to change their fleet. We discussed with stakeholders how to do that. Some wanted to bias it towards the non-petroleum products but NRS states we cannot discriminate against petroleum products which eliminated that particular avenue. Both Washoe and Clark Counties preferred to have this discontinued until the selection of fuel changes or until someone can find a way to come up with a more equitable credit system without having to violate the non-discrimination clause of the petroleum product.

Commissioner Turnipseed recalled Mr. Glick mentioned an amendment and asked if he agreed or opposed the amendment proposed by Southwest Gas.

Mr. Glick explained he was referring to Exhibit 1, the NDEP proposed amendment for the 1 year setback rather than the 2-year that is in the draft regulations.

Commissioner Jones asked if Southwest Gas had seen Exhibit 1.

Mr. Glick replied he had not discussed it with Southwest Gas.

Commissioner Jones questioned the reason for exempting counties of less than 100,000 population from compliance with this regulation.

Mr. Glick explained that exemption is mandated in NRS.

Chairman Close asked Mr. Glick for an update on the status of the A-55 water based alternative fuel.

Mr. Glick reported the company has severed their relationship with Caterpillar because they wanted to expand their market beyond "yellow painted engines" and there was a difference of opinion regarding marketing. We did designate that fuel as a choice of alternative fuels to be used for compliance.

Chairman Close called upon David Lee.

David Lee, representing GasMasters, a propane conversion center, objected to the proposed changes to the time schedule outlined in NAC 486A.160. The purpose of NAC 486A is to ensure a healthy level of air quality for Nevadans. In 1995, when NAC 486A was to take effect, the availability of facilities to perform conversions was almost non-existent and agencies falling under the guidelines were literally not capable of meeting the compliance requirements. GasMasters was started in 1996 to assist applicable agencies with their alternative fuel requirements. We have performed conversions for Washoe County, for private fleets, and I have been in contact with several state agencies throughout Nevada. The problem is not that there aren't conversion kits or OEM equipment available, department heads and most of the people I have spoken with are resistant to the change itself. The State Motor Pool will purchase approximately 500 vehicles this year. Under the original time schedule of 486A.160, 125 vehicles

would be required to utilize alternative fuels. If the proposed changes were to take effect, 50 vehicles would be converted putting an additional 75 vehicles on the road to contribute air pollution. That represents just one agency. If you calculate the total number of vehicles not converted because of a set-back in scheduling and add the increase in vehicles due to the growing population the results are quite detrimental. Changing the time schedule outlined in 486A.160 is nothing more than an attempt to forestall the inevitable and the economic impact will be greater because the cost of doing business and converting vehicles increases every year. We must continue on schedule as was initially outlined in 486A.160.

Commissioner Doppe asked Mr. Lee if there are other companies doing conversions.

Mr. Lee replied he did not know of any doing propane. A company in Las Vegas called "The Car Doctor", does natural gas conversions. We work directly with Amerigas.

Commissioner Doppe asked are there other companies doing conversions that would help agencies comply with the schedule as it is now.

Mr. Lee replied yes.

Commissioner Doppe asked Mr. Lee if the agencies affected are unable to comply for reasons out of their control such as parts or conversion services are not available.

Mr. Lee explained the excuse that there are no facilities, conversion kits, OEM manufacturers, is void. Several years ago several agencies converted to compressed natural gas (CNG) and found out it is not an easy alternative fuel to deal with because of low mileage and lengthy fill-up time. As a result of those disadvantages I heard negative response to converting to an alternative fuel, period.

Commissioner Jones asked staff to define who the stakeholders were who wanted the compliance pushed back.

Ed Glick explained in Washoe County he spoke with Comprehensive Planning, the Health District, RTC and the Clean Cities group involving private and public agencies in Reno, and he spoke with the City of Las Vegas. They are all air regulating public agencies.

Deputy Attorney General Jean Mischel asked if deleting the 90% is intentional?

Mr. Glick explained that was to more closely match the DOE schedule which tops at 75%.

Commissioner Doppe stated if the facilities are actually available then inertia has set in. If facilities are not available you have no choice but to grant allowances but we have to look at the overall scope of the problem we are addressing. Las Vegas Valley typically walks the razor's edge of non-compliance with regard to carbon monoxide and I don't know of a good reason why a public agency would be looking to forestall the inevitable. I agree with the clean-up language but this particular delay feature is causes a problem with me.

Commissioner Jones agreed and found it ironic that the people who want the reduction in the time span for compliance are the same ones pressing for compliance at the local levels with other industries for clean air.

Commissioner Turnipseed noted agencies are dealing with taxpayer dollars and wondered if the reason for their delay was budgetary. Could we hear from the City of Las Vegas or Washoe County, somebody that can tell us why they are opposed to the regulation as it existed before.

Dan Hyde, City of Las Vegas, reported there is an issue, not budgetary. Contrary to what Mr. Lee stated, our biggest problem has been lack of availability of kits. Out of an operating fleet of 117, the City of Las Vegas has converted, in-house, 110 vehicles to natural gas. The problem with the kits is the manufacturers kind of locked us out of what they call OBD2 Diagnostic On-board Second Phase because they did not want people that were that not "them" messing with their diagnostics. We, among other entities throughout the United States were messing with the diagnostics. After-market manufacturers tried to find a way to enter into those diagnostic programs and were unable to do so. For 18 months I was not able to spend the money we had banked to continue the program we had already

committed to. OEM is available now but was not available then nor was availability in conjunction with the government's buying cycle. We have to allocate money in July and August but were told vehicles won't be ready to order until March. The stakeholders are committed and we want to stay the course and if you back this up 1 year you are not really hurting anything.

Commissioner Jones asked if the money that was set aside is still being held in abeyance.

Mr. Hyde replied yes. A problem in government is you either spend the money or lose it. Last year I had \$170,000 in the bank. I convinced finance to allow me to roll it over so now we have approximately \$300,000 in the bank. We used \$60,000 and are acquiring 3 more alternative fueled bi-fueled street sweepers.

Commissioner Turnipseed asked Mr. Hyde if the problem the manufacturers had with your private mechanics messing with their diagnostic centers had been resolved.

Mr. Hyde explained the OEM's are now coming to the plate bigger than ever and I, as a user and a fleet manager want to buy fully warranted OEM equipment. Our only obstacle now is getting in compliance with the buying cycle. The on-board diagnostics have made significant strides. One of my vehicles and my mechanic are at a contractors this morning doing a conversion of a new type of kit on one of our new Chevrolet Vortex 5.7 liter 3/4 ton pickups. We are starting to move forward.

Chairman Close asked Mr. Hyde if there is a reason for the change from 75% to 90%.

Mr. Hyde explained the change will avoid confusion and put it into alignment with EPA rules.

Commissioner Doppe asked Mr. Hyde what percentage of his entire fleet is now converted.

Mr. Hyde explained all vehicles are not convertible but of those that are convertible, about 35% are converted. The city, county and various other entities are well ahead of the schedule.

Commissioner Tangredi noted Las Vegas is frequently listed in the most polluted cities in the United States, frequently in the top 10 with deadly carbon monoxide. We are an industry-based, revenue-receiving state. No doctor in the United States will advise someone over 60, although thousands are interested in retiring here, to retire here. It is not a panic, alarm, or alert, it is just letting everybody know that the eventual economic disaster will lie in the fact that we must have a clean, healthy, happy, productive valley and not what we have now.

Ken Mahal, President of Nevada Seniors Coalition, reported Las Vegas has the 3rd dirtiest air in the United States today. We call Dr. Ravenholt in the Health Department "Dr. Death". We think our pollution department is paid to work for the taxpayer's but we have evidence it works for the other side. There is back-pedaling on every facet to allow this air to get filthier. They must be told they must get into attainment unless they can prove to us, with documents that will stand up in court, that they cannot comply. I suggest maybe you give them an extension of 30 days and they come in with irrefutable proof that they cannot comply or shut down their equipment until they do. Jay Taylor, Southwest Gas, stated have worked very closely with the State Motor Pool here in the Las Vegas Valley and with the government fleets on establishing alternative fuels. Local government fleets have about 1,200 natural gas fueled vehicles in the valley. It is alarming to find that the Nevada Department of Transportation (NDOT) located almost directly across the street from a public natural gas vehicle fueling site, has not demonstrated the will or desire to even begin the process. Today can order directly from General Motors pickups and vans that are CNG fueled. You don't have to convert so they could be well underway in the transition to clean burning fuels. We have recommended to this Commission that there is already a vehicle in place to address the exceptions and that is the request of a waiver. Not all fleets are created equal. There are some exceptions where they don't fit the mold and they should be granted a waiver. Our industry has worked closely with Ford, Chrysler, General Motors, Cummins, Caterpillar, Detroit Diesel and all of these manufacturers now offer factory direct CNG, propane, or other alternative fuel vehicles. They did that in anticipation of a market. If states take a step back the OEM's will take a

step back saying "nobody cares - why should we offer the product?" It is important we look at where we have come from and where we are today. The assortment of vehicles continues to grow. Nothing can prevent NDOT from purchasing CNG or propane fueled vehicles but if they have good reason not to proceed then by all means ask for a waiver.

Commissioner Jones asked Mr. Taylor what his feelings were on the amendment (Exhibit 1) to Petition 96019.

Mr. Taylor explained one year is better than two but we don't really understand the need for this hearing in the first place. The approach and the vehicle to get the waiver is all we suggested and we think that is the appropriate way to address it.

Commissioner Jones asked Mr. Taylor if he is suggesting in his testimony today that NDOT is not in compliance today with regard to the 10% requirement?

Mr. Taylor stated he is not here to interpret Nevada law but he believes NDOT has a small number of alternative fueled vehicles. Nevada Motor Pool Department is operating alternative fuel vehicles, the City of Las Vegas and Clark County both have over 100 vehicles, Southwest Gas has 200, the Regional Transportation Commission has over 100, North Las Vegas has approximately 25 with more on order direct from the factory, Henderson has vehicles as does the Convention Authority, the Sanitation District and the Water District. I could go on listing the people that have moved forward but I could also list a very long group that has done nothing.

Commissioner Jones stated he is confused. Even the people who have done it well, as pointed out by the gentleman from the City of Las Vegas with 35% compliance, are asking for the delay right now simply because of purchasing or technical problems.

Mr. Taylor explained in their case the greater the percentage of CNG or other alternative fuel vehicles you operate, you will eventually reach the point where you must start to acquire vehicles that are more difficult to obtain. The City of Las Vegas, with over 100 vehicles, will have to start looking at other types of vehicles that they may not have previously considered for alternatively fueled vehicles. It is difficult, but simple compared to where we were 5 years ago. Basically, the City of Las Vegas is making decisions to convert their own vehicles rather than order factory vehicles. Factory vehicles are available but it is difficult for government to change some of its purchasing practices to allow the vehicles to be delivered on July 3 rather than June 15 so it misses one fiscal year and goes into the other. Again, the waiver procedure exists if someone has a problem. If it is considered justified I am sure they would be given a waiver and everybody would be satisfied.

David Lee noted Dan Hyde from the City of Las Vegas brought up a point which needs to be addressed in regards to the OBD2 Computer System utilized on newer vehicles. Mr. Lee explained every year manufacturers get more involved in the technology in the computer assisted automobile as far as fuel injection, fuel economy, and O2 readings. When they come up with an entirely new system like the LBD2 it takes the manufacturers of peripheral or outside markets such as OHG & EMCO, manufacturers of some of your CNG and propane conversion kits awhile to catch up to the electronics. A new car has all the new technology. A company called Autotronics is leading the country, they make a specialized box for the OBD2 computer systems. Two computer systems came out last year and it took Autotronics specific division 8 or 9 months to develop a system where you could integrate an alternative fuel supply such as CNG or propane into that car and not have the "check engine" light come on, not have any computer malfunctions because the OEM computer on board is designed to recognize certain criteria that the motor produces, certain fuel mixtures, certain O2 ratings - an assortment of things. It takes Autotronics time to catch up because you have to find out what the new requirements are and then they have to make a new integrated computer system that will work with the new vehicle. If we use that as a reason for why we are delayed 2 or 3 years what will happen in future years when they come up with another computer system? Each time they come up with a new

computer system it is going to take the manufacturers time to come up with something that will integrate into the new systems and that can't be used for a reason why we are in a delay here.

Mr. Lee continued, the City of Las Vegas has 35% compliance right now. If the largest city in Nevada can be that far above compliance why does there have to be a delay in the time schedule? It does not make any sense to me.

Commissioner Griswold asked staff which departments of state government are and are not in compliance.

Ed Glick answered, in regard to that question I think I have to explain how we measure the compliance. The regulation says that the percentage of acquisition is of new acquired vehicles within that fiscal year and it is not predicated on the entire fleet. It is not 35% or 25% of the existing fleet, it is 25% of the new purchases. If an agency does not buy any vehicles then there is no compliance that year and if they don't purchase any vehicles there is no conversion requirement for that year. An agency rarely buys hundreds of vehicles - more like 10, 20 or 30 vehicles. With the lower percentage that we have been using there are very few agencies that are not in compliance and we have been in discussion with agencies not in compliance to find out why. The requested delay arose from those discussions plus we want to match the U.S. auto maker's schedule. They don't look at Nevada's schedule they look at the Department of Energy's (DOE) schedule. I believe Clark County ordered vehicles from one of the big 3 manufacturers, were told they were available, but they waited 2 years and never received the vehicles.

Also, they are just now starting to get the bugs out of the OBD2 conversion kit. Yesterday I received information that using the first kit, they would be driving along and all of a sudden the car just quit because the inner link between the OBD and the kit was sending an erroneous signal at some point so you were sitting there with nothing. We felt the 1 year would bring these two factors together.

Chairman Close asked, when you look at 10%, you are not saying 10% of the total fleet but 10% of the new buys?

Ed Glick explained all these percentages are of new vehicle acquisitions so when you get to the 75% eventually as fleets turn over then yes, 75% of that fleet will be alternative fuel but it is going to take a number of years for that turnover.

Chairman Close stated by the year 2000 we should be able to have a higher percentage than 75% - it was 90% and I am wondering why you moved it down to 75%.

Mr. Glick explained during some of the meetings some people objected. 90% was much more ambitious than the federal government (DOE maximum limit) and they wanted us to match that more closely.

Chairman Close asked Mr. Glick what percentage of actual vehicles in the state now run on alternate fuel.

Mr. Glick explained there are almost 300 Compressed Natural Gas (CNG) in Clark County, 13 CNG in the Reno area, 1100 diesel in Las Vegas and 145 diesel in Washoe County, are 3 Liquid Petroleum Gas (LPG) in Las Vegas and 2 LPG in Reno. To put that in perspective, the fleet we are talking about is basically state and local entities and if there are 900,000 registered vehicles in Las Vegas then the state and local entity fleets represent about 1% of that number.

Commissioner Molini asked Mr. Glick for a comparison of the cost of an OEM alternative fuel vehicle to a regular fuel vehicle.

Mr. Glick explained that gets complex. They are more expensive. Depending on the fuel, conversion of a vehicle runs between \$2,000 - \$5,000. The LBD2 has increased that cost by almost \$1,200 on some of the kits. CNG kits used to cost about \$3,500 and now they are approaching \$5,000. You encounter an interesting thing when you purchase an OEM vehicle and Ford is the only vehicle being delivered in the bids right now. Only select dealers have alternative fuel vehicles and if that agency did not submit the low bid and you need to get acquire a vehicle the end cost can be more than a standard bid vehicle. For instance, in Las Vegas one Ford dealer got the bid for the base fleet, \$3,000 less than the other bid but the other bid had the AFV (alternative fueled vehicle). If you add on the

incremental \$3,000 - \$5,000 cost of the conversion kit the cost is greater.

Commissioner Doppe noted acquisition costs are apparently more expensive for the OEM cars but how about long-term operating maintenance?

Mr. Glick explained amortized over a long-term they are cleaner, easier to maintain, oil does not get contaminated as quickly so there are long-term benefits, but not an immediate return. The price of fuel is somewhat less but the fuel tax has not decreased for alternative fuel so apparently there is not a big gap between that and other petroleum products.

Commissioner Doppe asked if it would be fair to say that in the long-term over the life of the vehicle, operating costs, lower fuel and maintenance costs, wouldn't you get back some of that initial acquisition cost?

Mr. Glick replied he believed the initial cost could be recovered.

Chairman Close stated he felt the Commission should not go to 75% after the fiscal year 2000. There is time between now and then to change it if we cannot meet that standard but to change it to 75% lowers the target considerably. One thing we were trying to accomplish when we previously addressed this issue was to have the public fleet convert resulting in more fueling stations so private vehicles would be encouraged to convert.

Commissioner Doppe stated the it seems the intent of this revised schedule is fundamentally to fix a conversion schedule problem that doesn't exist and that is demonstrated by the large number of fleets that have converted, including the City of Las Vegas, that is in excess of the existing requirement. I think it would be unfair to business groups that have relied on the conversion schedule posted and unfair to people who have put their career on the line or public agency fleet managers who have started this conversion based on this schedule. To step back now ignores the leadership role these people are playing with regard to the real problem of air quality in Washoe and Clark Counties. I can't support backing off of the existing schedule.

Commissioner Jones agreed, particularly in light of the waiver process being in place. The system has built in a process whereby they can get a waiver if they need to. I agree with Commissioner Doppe and Chairman Close. Chairman Close called for a motion.

Commissioner Doppe made a motion that the Commission accept Petition 96019 as it is written with the exception of the schedule change to Section 6 which I want to make clear in my motion, remains as it currently exists.

Commissioner Tangredi seconded the motion.

The motion carried.

Chairman Close moved to Agenda Item II.B

B. Petition 96020 is a temporary regulation that amends Section 23 of Petition 96018 (LCB R-119-96) by amending the reference to Method E1739-95 as adopted by the American Society of Testing and Materials to be obtained from the Society directly rather than the Division of Environmental Protection. This proposed changes includes the address and cost of acquiring the document "Method E1739-95".

Allen Biaggi, Deputy Administrator - NDEP, explained Petition 96020 relates to corrective action regulations heard and approved by the Commission in September, 1996. A reference, per Legislative Counsel Bureau (LCB) requirements, in NAC 445A.22705 subsection 5 the American Society For Testing Materials (ASTM) document. LCB requires all documents referenced in regulations provide information of where that document can be obtained and the document price. At the time the regulation was originally proposed the division understood they could provide that document free of charge. We have since learned that ASTM has copy-written that document so we are requesting the regulation be changed to reflect the document cost of \$31.00, the address of ASTM and the document

must be obtained from ASTM.

Commissioner Molini asked Mr. Biaggi what the potential impact would be relative to document availability. Mr. Biaggi explained the risk-based corrective action requirement relates primarily to contaminated sites where there is soil contamination. Consultants would be required to obtain this document for a cost of \$31.00. It is not necessary to purchase that document for every single corrective action site that consultant is working with, it would be a one-time purchase.

Chairman Close asked if the price had to be listed. If the price changes we have to amend our regulation.

Mr. Biaggi explained LCB requires the price must be stated.

Chairman Close called for a motion.

Commissioner Turnipseed made a motion to adopt Petition 96020 as presented.

Commissioner Molini seconded the motion.

The motion carried.

Chairman Close moved to Agenda Item II-C:

C. Petition 97001 temporarily amends NAC 444 to allow solid waste management agencies to apply less stringent standards at Class II municipal solid waste landfills. The proposed regulation amends NAC 444.667 regarding control of explosive gases, NAC 444.716 regarding the daily covering of landfills, and NAC 444.7175 regarding final landfill coverings. The proposed changes provides for more flexibility in establishing monitoring schedules required by the aforementioned citations. NAC 444.685 through 444.6859 is proposed to be amended by adding two new assurance mechanisms; the local government financial test and the local government guarantee.

The Department presenter was temporarily out of the room.

Chairman Close explained he would take public comment before the presentation and allow the person to speak again after the presentation.

Allen Gaddy, with Environmental Technology of Nevada, operators of a Class III industrial landfill in Clark County requested a continuance of this agenda item regarding financial assurance. The items before you today are being brought to you by Class II Landfills who are requesting some financial test be allowed by the regulation. The proposal as written would also be afforded to Class I Landfills. We would like to work with staff in making some of the proposed amendments since they address just the Class II landfills and their problems and we would like to make sure that the proposed regulations being considered by the federal government would allow the flexibility for the corporate procedures. If the federal regulations do become final we will have to address this issue again. The Class II landfills are not required to meet the financial assurance until October so it may be premature to make these amendments without getting the final proposals from the federal government for private industry as well.

Chairman Close asked for questions.

Commissioner Jones asked Mr. Gaddy if the federal changes were expected prior to the October date of compliance.

Mr. Gaddy replied he did not know, staff may have more information.

Les Gould, Supervisor, Waste Branch, Bureau of Waste Management, NDEP, explained the new federal and state landfill regulations require the owners and operators of municipal solid waste landfills to provide financial assurance that funds will be available when the time comes for closure and post-closure care and specific mechanisms that may be used are described in the regulations. The deadline for having these mechanisms in place is April 9, 1997, for Class I sites. In November, 1996 EPA increased the flexibility available for local governments by adding two new mechanisms, the local government financial test and the local government guarantee. These mechanisms allow a local government to use financial strength to avoid incurring expenses of using a third party

financial instrument. The financial test provides the means to ensure the cost for its own landfill closure/post-closure care. The government guarantee is a similar mechanism by which the local government can ensure the cost of another owner or operator. The November rule also provided approved states, like Nevada, the ability to waive the requirement for up to one year, with cause, if it did not involve a threat to the public health or environment. The reason for this was to give additional time for local governments to make use of the new public rule. This petition is for the adoption of the federal flexibility into the Nevada solid waste regulations. Division staff met with local government managers and accountants to review the local government test. Carson City, Humboldt County, the cities of Elko, Ely and Mesquite all believe that they can meet the test requirements and intend to make use of it, if available. Additionally, each of them has begun to set aside funds to meet the future cost of closure/postclosure care. Since the financial test requires public acknowledgment of the obligation it would be difficult for local government not to do this. The Division intends to consider requests for time extensions on a case-by-case basis. EPA has announced that it will soon be issuing a final rule for a corporate financial test. This will set up a similar mechanism for private owners/operators of municipal waste landfills. The final rule was due out in February. It is not out yet but I am confident it will be promulgated soon.

Mr. Gould explained there are 10 Class I sites in Nevada that will be subject to this rule as of April 9, 1997, and 20 Class II sites which will become subject to the rule on October 9, 1997. Out of these 30 total sites only 2 are privately owned and operated so this financial test to local government will be available to the majority of the landfills in the state.

Mr. Gould stated the Division wishes to withdraw Sections 7, 11 and 12 of Petition 97001. These sections would adopt a federal rule providing the flexibility to allow small landfills to meet alternative standards for the frequency of explosive gas monitoring, daily cover and final cover. Although EPA had stated that this rule would be out in early 1997 it has not yet been published and states cannot provide that flexibility. This is the reason for our withdrawal of those sections.

Mr. Gould reviewed Petition 97001.

Section 1: A definition of local government and states the general standard of the local government test.

Section 2: The financial component:

- 1) Financial component which measures the financial strength of the entity;
- 2) The public notice component which requires the local government to publicly acknowledge that it has this environmental liability hanging out there at the time of closure and to incorporate it into its annual records;
- 3) The record-keeping and reporting requirement which details specific requirements that places certain information into the operating record of landfill and to provide for specific measures to ensure that their records are updated on a regular basis.

One condition of the financial test is a bond rating requirement - bond ratings must be investment grade or higher for any general obligation fund. If an entity does not meet the bond rating requirement because they do not have any general obligation bonds, there are two financial ratios which allow them to pass the test.

There is also a requirement for the use of GAP (General Accepted Accounting Principals) and there are certain stipulations that render an entity ineligible to use the test; i.e, having any general outstanding obligations bonds in default or for which they are not at investment rate or above.

Mr. Gould stated, at line 25 on page 2 I would like to add, after the word expenditures, "and expenses of all funds of the local government". It would then read "total expenses include all expenditures and expenses of all funds of the local government, excluding capital outlays and debt repayment".

Section 3: Public notice component: Requires that the comprehensive annual financial report make reference to this

financial obligation, the nature and source of requirements of the reported liability, the percent of landfill capacity used to date and the estimated remaining life of the landfill in years. It also establishes the use of a public document prepared by the Governmental Accounting Standards Board. Statement 18 assures compliance with this reporting component.

Section 4: Outlines specific material that must be placed in the operating record of the site:

1) A letter to be signed by the entities chief financial officer which lists cost estimates covered by the test, provides evidence and certifies that they are passing the test requirements, that is either the financial ratios or the bond requirements;

2) The latest audited fiscal year financial statements have a clean unqualified opinion from the independent auditor who audits the entities books;

3) Report to the local government from an independent auditor that states that findings relative to the financial ratios to the use of GAP to any deficit spending and to the clean unqualified opinion to the financial status of the entity be inserted. A city prepares its books, an independent prepares an annual financial statement rather than leave it up to the enforcement agency to compare the books which the city prepares with the operating record of the facility and with the annual financial statement. It requires that an independent auditor makes those comparisons and states that the chief financial officer of the entity has properly prepared the statements and that they are based on accurate information.

Mr. Gould explained these items are also required to be placed into the operating record of the site according to a specific schedule and they are required to be updated within 180 days after the end of the fiscal year. A Solid Waste Management Authority may require information at any time if it believes that an entity may no longer pass the test.

Section 5: Includes calculations of cost to be assured. There is a maximum threshold of environmental liability cost that the entity can assume under this rule. If the financial assurance cost estimates exceed that threshold that portion of it would have to be provided under a different mechanism such as a third-party trust fund insurance policy or surety bond.

Section 6: The local government guarantee is basically the same thing, however, it allows a local government to put its full faith and credit on the line for another solid waste disposal site owner or operator. If the owner or operator defaults for some reason or does not carry through with its obligation that obligation falls back onto the local government.

Section 7: Operating criteria - control of explosive gas. We ask to withdraw Section 7.

Section 8: Amends an existing regulation. This is an important one that gives us the authority to waive the requirements for financial assurance for up to 12 months for cause if there is no indication of threat to the environment or public health.

Section 9: Adds this financial test to an existing regulation which lists the available mechanisms for financial assurance.

Section 10: Puts a limitation on the use of local mechanisms so that a mechanism cannot use a performance guarantee in combination with another financial guarantee.

Section 11: Refers to the cover of solid waste. We ask to withdraw Section 11.

Section 12: The final cover and closure of certain sites. We wish to withdraw Section 12.

Mr. Gould asked to make two editorial corrections on line 19, page 3 - replace the words U.S. Government with the words U.S. Governmental and on line 15, page 4, replace the words U.S. General with the words U.S. Governmental.

Commissioner Griswold asked if these regulations only applied to Class II sites.

Mr. Gould explained these regulations apply to all solid waste management facilities in Nevada. However, there is a different effective date for Class II sites. Class I sites could use this to demonstrate financial assurance as of the compliance date April 9, 1997 and Class II sites have until October 9, 1997. It would be available for both.

Commissioner Turnipseed asked does this regulation essentially prohibit Lincoln County or Esmeralda County from having their own landfill?

Mr. Gould replied no and explained the intent of this regulation is simple. These regulations were originally proposed at the federal level in 1988. In 1991, when the general landfill regulations were formally adopted, EPA received many comments from private industry and local governments that there needed to be a financial test added to allow a corporation or a local government to use that financial stability to demonstrate compliance with the financial assurance requirement rather than go to a third party. I believe the intent of this is to basically facilitate compliance at a reasonable level and to allow entities to do so at a lesser cost without having to go through a third party.

Commissioner Turnipseed asked if Esmeralda County has a T-fund financial officer. I assume all their accounting duties are done by some outside firm but even if they contract with an outside contractor to take their solid waste away they are still responsible for some amount of the financial assurance on closure.

Mr. Gould explained only if they have a municipal waste landfill. For instance, Douglas County does not have a municipal waste landfill subject to these regulations so there is no financial assurance issued there. If Lincoln County shipped all of its waste out of the county and did not have a landfill it was responsible for it would likewise be out of the requirement.

Commissioner Turnipseed asked if the responsibilities are so onerous it makes it prohibitive that they could ever even obtain one.

Mr. Gould explained they could still acquire third-party financing. Some communities may not be able to pass this test either because they have a bond rating below investment grade, are in default, or perhaps do not have any general obligation bonds and cannot pass the financial ratio test. Those governments then, if they want to operate a landfill, would have to resort to the use of the other mechanisms which are already in the regulations.

Commissioner Jones asked Mr. Gould for his feelings on Mr. Gaddy's request to table this in anticipation of the federal regulations that would allow for private corporations, a similar federal regulation. Will we have to revisit this when those regulations are passed?

Mr. Gould replied he understood the proposed language for the corporate financial test is that it will be quite similar to what is before you today, only applied to corporate entities. I am confident this regulation will be available within the next few months. I would prefer to implement these regulations now at the local government level because we are talking about the vast majority of the existing sites and many of them are already focused on meeting the requirements and I would like to encourage them to press ahead. One element certainly needs to be adopted, the section which authorizes us to give the one-year extension for that because it is difficult for both the corporate sector and the government sector to comply with the regulations and take advantage of the flexibility when it hasn't been fully published.

Commissioner Jones asked if we move ahead could we facilitate altering these to meet the corporate requirements when those regulations are available?

Mr. Gould explained it would probably be under a different section, I doubt if it would change the name from local government to local corporate - it would be a section to address a corporate entity.

Deputy Attorney General Mischel stated it would be appropriate to ask Mr. Gaddy from Environmental Technology if he wishes to maintain his request for continuance in light of the withdrawal of the 3 sections.

Allen Gaddy, Environmental Technologies explained he would like to see continuance on all the items except the one-year extension.

Robert Groesbeck, General Counsel for Silver State Disposal referenced the practical effects of the regulations. Out of the 30 permitted landfills in the state, 10 are Class I sites and only 2 are privately owned and operated. There are some real issues here. Neither I or my staff was approached by Mr. Gould concerning these regulations. I wish to specifically address Section 9, subpart 5, the local government financial test for the guarantee. From a practical standpoint there is an unfair competition issue here. As a private company we are currently going through the final financial assurance process. We have committed upwards of \$37 million dollars to closure/post-closure and corrective actions. Are we going to allow a local government, just by virtue of being a local government, to come in and say "we are going to assume that liability, that risk, and ultimately our residents are going to assume that cost". That allows a private operator basically to get off the hook, no questions asked. I can assure you that is going to happen and that puts that private operator in a very enviable position. On the one hand they don't have to worry about the financial assurance requirement - more importantly the revenues that are generated as part of the rate structure don't have to be devoted to financial assurance. That would open an increased bottom line for them. That is patently unfair to the private sector, particularly a private operator or private owner. We have spent a tremendous amount of money building the Apex facility - we are in full compliance with Subtitle D, we have every intent of meeting the financial assurance requirement and we expect other operators to do the same. We can't say "well we are going to make a distinction for local government". More importantly, I think that is unfair to local government and you need to look at that. Mr. Gould mentioned he talked with certain government bodies but I can think of a number of communities, Henderson in particular, that were not contacted. What you are doing is passing the buck - for lack of a better term. What you are saying to the residents is "we are going to build a landfill, we will allow a private operator to operate it but we are not going to put them on the hook". Ultimately, when this landfill closes and those costs are incurred the residents of the community are going to guarantee payment and that is unfair. We ask that we continue this item and revisit it when the corporate test is finally released from the EPA and try to address both issues simultaneously. There is no urgency here in light of the waivers and we think that is fair to all the operators. We think this issue is of such great importance that it needs to be continued. I hope NDEP will sit down with the private sector, particularly the private owner/operators and work towards a resolution that benefits all parties.

Commissioner Jones asked Mr. Groesbeck if he seriously thinks local government is going to simply assume responsibility. I don't think it is going to be quite as readily done as you are suggesting.

Mr. Groesbeck explained from a public sector standpoint I would much prefer to see a private operator insured for that potential risk down the road - or bonded for it - and know that a third party is going to pay for it, not the residents of the community. -

Commissioner Turnipseed asked Mr. Groesbeck if Silver State contracts with local governments to take their solid waste.

Mr. Groesbeck explained Silver State contracts with Clark County and the cities of Las Vegas, Henderson and North Las Vegas.

Commissioner Turnipseed asked do you, in part, base your rate structure on whether you are going to have to assume this financial assurance?

Mr. Groesbeck explained that is factored into the bottom line.

Commissioner Turnipseed continued do you contract for so much a ton or some unit of cost?

Mr. Groesbeck explained they have a base rate that is negotiated through the respective franchise agreement.

Commissioner Turnipseed asked, assuming you don't have to provide this financial assurance of closure/postclosure and a problem develops, how would you or us or the NDEP determine who splits those cleanup costs - would it be on a percentage of whose solid waste went into the landfill?

Mr. Groesbeck noted that is a very good question. In our case that issue is resolved because we have provided the guarantee through our financial assurance. We will address it as a company, not the local municipality and that is the basis for setting that money aside now. At some point Apex, as with every landfill in the state, is going to close because you have a life cycle and we are putting dollars aside now preparing for that day. The government sector is certainly not under that requirement and in fact will not do that. It is the good faith and credit of the community that they are putting at risk.

Commissioner Turnipseed stated, assuming you did not assume the financial assurance of closure/postclosure monitoring then you just set up a fight between your individual contractees, if you will, of who is going to pay for what portion.

Mr. Groesbeck stated that is an issue but obviously I can't envision the respective municipalities here allowing us to do that - notwithstanding the corporate test that we are reportedly going to see soon. I would hope government is too smart for that. If they have a private provider that is guaranteed a revenue stream for closure/postclosure corrective action, why in the world would they let them off the hook?

Commissioner Gifford stated he had a question on Part 2 on Section 11 and Part 3 on Section 12.

Chairman Close reminded Mr. Gifford that Section 11 and Section 12 had been withdrawn.

Chairman Close asked Mr. Gould to respond to Mr. Groesbeck's comments.

Mr. Gould stated he believed the financial test does establish some standards. This is a responsibility that they have to acknowledge publicly in their annual financial report that has to be audited independently. They are subject to these regulations because they are an owner or operator and are required to estimate costs of closure and postclosure and assert they are financially competent to fulfill those obligations because we have passed these tests, we submit this documentation into a public record and we have independent auditors come in and verify that we have done so. Mr. Gould explained it would be difficult for a local government to get away with assuming the obligation without planning how to meet it. In our meetings we discussed, although the regulations do not specifically require you to set aside money, we think it is a good idea that you start planning for it otherwise how can you say that you are actually recognizing your obligation. As I mentioned before, of all the communities that we met with the financial officers said we have a enterprise fund or we have a set-aside account, our financial costs are such-and-such, we have computed those costs according to the formula, we have therefore computed that on an annual basis and we set aside so much money. I believe the money has been put aside for that future date.

Mr. Gould explained these mechanisms also can be used to assure corrective action. When we talk about closure/postclosure costs we are talking about costs you can plan for - put a cover on, certain site grading, continue ground water monitoring for 30 years - corrective action may become a requirement if, for some reason, there is an issue of contamination to the ground water at a site. Then additional assessment monitoring would be required and a corrective action would have to be established according to the regulations that are in place. Once that is settled upon, the entity would have to come up with a cost estimate to perform the corrective action and that cost estimate would have to be included in the financial assurance. That is another aspect of what the financial assurance mechanisms are designed to address. In the case of Nevada, at this point we don't have any landfills subject to these regulations for which there is a corrective action.

Chairman Close asked, by this regulation are we in fact giving a governmental agency an advantage over private operators because of the financial requirement.

Mr. Gould replied he is confident that the corporate test will become available over the next few months. As long as that corporate test is available and the private owners and operators have the ability to request a waiver or an extension of this requirement until they can make use of that corporate test I don't see a competitive disadvantage here.

Chairman Close asked, do you think there is an advantage to bringing them both out at the same time.

Mr. Gould replied he thought the disadvantages outweigh the advantages. I would prefer to see us move ahead right now with landfills you need to work with to get the financial assurance in place so they are addressing it sooner rather than later and they would prefer to use this mechanism if available.

Commissioner Jones asked, the requirement for compliance is not until October?

Mr. Gould explained only for the Class II sites, the small sites. Class I, the 10 larger sites must be in compliance by April 9, 1997.

Commissioner Jones asked if there would be a true hardship if we do wait for the outcome of the federal regulations in regard to corporate compliance, then do a side-by-side comparison so that we don't get into a situation where we are giving preferential treatment.

Mr. Gould explained if that is what we are left with here I would propose to make waivers available to those communities, those local governments which requested them, on the basis that the regulation that they want to use is not in effect. We can't offer that flexibility at this point.

Mr. Jones asked, you are saying it is not a hardship because a waiver is available but technically you are going to have to go through a waiver process?

Mr. Gould replied correct.

Commissioner Iverson stated he was concerned that all entities in the state were not afforded the opportunity to meet with NDEP. I agree NDEP needs to work very closely with these individuals because I definitely think there are some impacts from the private operators out there. They may need more time to review this. If there is not a significant problem in continuing this we may want to consider that.

Chairman Close noted, looking at Section 2 on page 2 it appears if the entity is doing well there is not a problem but if it is doing poorly financially it is too late to do anything about it. If they have had deficits for the past 2 years there may not be any way of providing corrective action because there may not be any money left. That seems like after-the-fact planning because the city is no longer fiscally able to do anything about it.

Mr. Gould explained there are two elements designed to address that concern:

- 1) There is a requirement to annually update. As new reports come in, the local government will recalculate the costs, go through the test again, basically do the whole thing over again;
- 2) If the regulating authority, the Solid Waste Management Authority, has reason to believe that the entity may no longer pass the test then it may request information or examine the books to verify that they still pass the test. If at any time it is discovered that the entity no longer passes the test, within 30 days they need to acquire a third party instrument to assure those funds.

Chairman Close stated but if it is already in default who is going to make the assurance available?

Mr. Gould explained there are a variety of third-party instruments out there. I am not sure what conditions or terms they are made available under.

Chairman Close called for additional comments.

Stephen Kalish, Silver State Disposal, noted comments today indicate there are no hardships to delaying this for 36 to 90 days. Companies such as Silver State are beginning to put away the dollars today, will continue to put away the dollars, looking forward to closure/postclosure and corrective action. What we need to do right now is to take

the time so that private business does not sit out here and begin to charge its users a fee for corrective action/closure/postclosure while government can write a letter and not charge the customer. The balance of scales needs to be even. We are asking for time. Wait until the federal government comes with the corporate law that may give us that same advantage - maybe it won't - but as a company we are still going to provide that \$38 - \$40 million, whatever it takes for closure of that landfill. I think that is the purpose of the federal rule, not to worry about who does it or how it happens but to put money aside so that future generations have this fund to close that landfill properly or to take corrective action. The corporate entities would appreciate more time to see what the federal rule is, work with NDEP and come back with a simultaneous operational plan that works for both governmental and private sectors.

Chairman Close called for additional questions or comments.

Chairman Close called for a motion.

Commissioner Turnipseed stated it is important to the Division that we adopt Section 8 today.

Commissioner Jones made a motion to adopt Section 8 of Petition 97001 and that we revisit this issue when staff receives the federal regulations in regard to corporate.

Commissioner Iverson asked Mr. Gould to explain what Section 8 does?

Chairman Close called for a second to the motion.

Commissioner Molini seconded the motion.

Mr. Gould explained Section 8 simply adds to an existing regulation allowing NDEP or the other solid waste management authorities to grant an extension for compliance with financial assurance requirements. The extension may be granted for up to one year based on cost. This is of particular importance because few of the landfills in Nevada are currently in compliance with that standard and will meet the April 9, 1997, requirement.

Commissioner Molini asked if we were to postpone this regulation, other than Section 8, pending promulgation of rules by EPA for the private sector, what implications does that have? You say that every few of the landfills are going to meet this April 9 requirement, therefore they are going to have to get a waiver for a year so will that delay progress. We have heard from Silver State that in their case it will not.

Mr. Gould stated it doesn't have to delay progress. Something will have to be worked out with each site on a case-by-case basis. If they request an extension because the flexibility that they have been counting on is not there we would work out something based on our anticipation of when that would be available. And it would not necessarily be a blanket 12-month waiver.

Commissioner Griswold asked - do you realistically expect these companies to comply at the end of the 1 year extension?

Mr. Gould replied yes.

Chairman Close stated a motion has been made and seconded and requested a vote by the commission.

The motion carried.

Executive Secretary David Cowperthwaite requested clarification that only Section 8 of Petition 97001 is adopted and will be filed with the Secretary of State.

Chairman Close reiterated that only Section 8 would be filed.

Deputy Attorney General (DAG) Jean Mischel noted, for clarification, the motion was to -

Commissioner Jones interjected - as soon as the department has enhanced the federal regulations for a corporate initiative that we then come back and revisit the entire issue.

DAG Mischel asked, from a technical standpoint is this a continuance so that we would review the transcript but would not have to specifically reiterate the comments that were made today for any other justification? A

continuance would preserve this portion of the hearing but if you are denying the rest of the petition the petition would be brought forward as though you had not conducted this hearing, for the purpose of the record, on appeal for example. Of course you would have the knowledge that you acquired today, but in terms of the record a continuance would make this hearing all part of the same regulation hearing.

Commissioner Jones stated he did not make the motion in the form of a continuance. I think the reason for that is when the federal government comes out with the regulations we may want to change some of what this is when we finally do the comparison. That was my thinking. I used the word revisit which I thought would allow them to bring it back up again at their convenience.

DAG Mischel stated, without a continuance, technically.

Executive Secretary Cowperthwaite explained the division would come back to you with another petition that would take this up as well as other aspects that were discussed that were not currently available for you to review.

Chairman Close agreed and stated you could combine this with the corporate aspect, for example.

Chairman Close moved to Agenda Item III.

III Settlement Agreements on Air Quality Violations

A. Rees's Enterprise: Notice of Alleged Violation # 1214 & 1215:

Tom Porta, Bureau of Air Quality, reported Rees's Enterprise was inspected on October 18, 1996, operating a sand and gravel operation in Humboldt County near Golconda. At the time of the inspection it was documented they were operating without the water spray control equipment and also had an additional jaw crusher on site that was not permitted. The Division issued three notices of violation. One notice was a minor fugitive dust violation of \$250 which Rees has paid and the other two are considered major violations. We assessed \$4,000 for operating without the control equipment and \$2,500 for operating without a permit for the jaw crusher. The total amount for consideration today is \$6,500 for the two major violations.

Chairman Close asked for questions or discussion from the public.

There were no questions or discussion.

Commissioner Turnipseed made a motion to accept the settlement.

Commissioner Griswold seconded the motion.

Motion carried.

B. Frehner Construction Company: Notice of Alleged Violation # 1209, 1210 & 1213

Tom Porta reported this involved Frehner Construction Company in violations at two different locations. The first location was inspected in Humboldt County on September 19, 1996, and the second inspection involved a different crushing operation in Eureka County on September 26, 1996. At the Eureka site we found the operation there operating without control and also fugitive dust and we had a permit issue that we cited them for then since changed to a warning. It was not seen as a major concern because they simply moved the equipment versus their not having a permit for it. We negotiated a settlement of \$10,000 for operating without controls and the minor violation of \$250 for fugitive dust. At the second site, which we refer to as Paradise Peak site, we had fugitive dust observed during the inspection as well as operating without controls as well as failure to obtain a permit for this site. That Humboldt County site was fined \$20,000 for the major violations and \$125 for the minor fugitive dust. The total amount for consideration for these three violations is \$30,000.

Chairman Close asked for questions or discussion from the public.

There were no questions or discussion.

Commissioner Doppe made a motion to accept the settlement.

Commissioner Molini seconded the motion.

Motion carried.

C. Capital Aggregate Products Inc.: Notice of Alleged Violation # 1220:

Mr. Porta reported Capital Aggregate, located outside of Carson City in Moundhouse, was inspected on October 16, 1996. At the time of the inspection we found parts of their equipment were operating without controls and also fugitive dust. This was their first violation. Immediately after the inspection they contracted for \$3,500 worth of repairs to their facility. We negotiated a \$500 fine for the major violation of operating without controls and they have paid the fugitive dust fine of \$125.

Chairman Close asked for questions or discussion from the public.

There were no questions or discussion.

Commissioner Molini made a motion to accept the settlement.

Commissioner Trenoweth seconded the motion.

Motion carried.

Ken Mahal questioned if Item V, the workshop for Cryptosporidium would be open to public discussion and if other items, other than cryptosporidium could be discussed.

Chairman Close replied public comment would be allowed. Due to the shortness of time the Commission will cancel the field trip to Lake Mead today. The field trip will occur at a later time, probably in May, and we will have more extensive tour. Canceling the tour will allow more time today for public comment.

Chairman Close recessed the meeting for lunch at 12:25 p.m.

Chairman Close reconvened the meeting at 1:20 p.m.

Chairman Close moved to Agenda Item IV. Discussion Items

A. Update on Pending Legislation of the 1997 Session

Executive Secretary David Cowperthwaite reported the Division has a sophisticated method of tracking 1997 legislation and distributed a report identifying bills that would affect the Commission in terms of direct jurisdiction or how the Commission is able to operate. The bills include:

AB71, a UEPA bill, and AB72: Focus on exempting telephone and telegraph facilities from the UEPA process.

AB72 bill changes the requirement for review of utility environmental protection act applications from the Commission to the Division. Our goal is to make the UEPA process more efficient and productive.

Mr. Cowperthwaite explained a lot of these bills affect the Administrative Procedures Act and I bring them to your attention because of those impacts that will alter how regulations are developed and filed.

AB120: Begins to implement Question 8. Question 8 essentially said "the legislature can now have the right to be able to nullify or suspend regulations if they do not like them" so there is a statutory thing to affect NRS 233B to bring this change about.

AB122: Also makes changes to the Administrative Procedures Act with a requirement for a 10-year cycle of review of all regulatory citations. Until this passes I really do not understand the consequences in terms of the Commission's activities. There is also a requirement in AB122 to hold workshops prior to the hearing. We are trying

to figure out how to interpret that, whether the Commission will have to conduct workshops or if the agency can do workshops before going before the rule-making body, which in this case is the Environmental Commission. Also, under AB122 the attorney general will be more intimately involved in the regulatory process in terms of developing guidelines for drafting. A more serious is the way they have designed this bill is to make it that after a regulation is filed with the Secretary of State by LCB it will not go into effect until 90 days after. So we are talking a cycle that extenuates - the 60 day period we have now will probably bring it up to 180 days or more for a regulation to go into effect.

AB123: Imposes some duties on the LCB by establishing a regulatory registry and it requires the Commission to pay for the upkeep of that registry. It is a fiscal type of function and the Commission's budget would have to be augmented if AB123 passes.

AB124: Amend AB123 of the 1993 session. AB123 requires all forms, fees, and applications to be consolidated for state and local government. I bring it to your attention because they are going to try to make that a much more open requirement in terms of the Department of Taxation having more public input into that process.

AB149: Makes various changes to public lands. This particular bill affects probably every one of you on the Commission because most of you sit on a board established in the 1980's dealing with state land (if the state does take over federal lands that there will be a special organization unit established in state government and this board is a public lands board). AB149 essentially says that the existing board will go away and the county commissioners around the state would take over that function.

AB171: Clarifies the issues that certain policy interpretations of findings of executive agencies must go through the regulatory process. I think there are significant impacts, especially on the Division side of things, but it could certainly impact the Commission as it tries to deal with issues that may have to end up running through the regulatory cycle.

AJR19: 1995 issue and sort of moot at this point because Question 8 was approved which allows the legislature to step into the regulatory process.

SCR2: Deals with the issue of the Tahoe Compact and will probably require both the Division and the Environmental Commission to participate in their legislative study committee.

Commissioner Molini asked if the status of hearings on AB171 is known.

Lew Dodgion, Administrator, Division of Environmental Protection explained a hearing was already held on AB171. It was referred to a subcommittee with expected input from some of the interested agencies and that committee was meeting at 8:30 this morning.

Commissioner Molini asked if that subcommittee is specific to this bill?

Mr. Dodgion replied yes.

Commissioner Turnipseed asked if that still only applies to those agencies that are covered under the Administrative Procedures Act.

Mr. Dodgion replied yes.

Chairman Close moved to Agenda Item IV-B: General Commission or Public Comment

Ken Mahal, President of Nevada Seniors Coalition stated the Commission is a much needed breath of fresh air who need new insight into the issues that not only impact this county but this state. The Coalition is concerned about the cryptosporidium and asked to give an update on the Coalition activities.

Mr. Mahal carried the Coalition's response to the environmental impact statement that was made and offered to provide the commission with copies of the text of the response.

We have been in the forefront of trying to do something about air quality throughout the state because we know that in a lesser degree, pollution is everywhere there is population in the state. I sent a to the EPA Regional Office in San Francisco concerning some of the problems with air quality and some of what we consider outright negligence or outright representing the polluters rather than the residents. Copies can be made of this letter. In Clark County we saw the pollution, the carbon monoxide, problem grow by adding approximately \$3 billion dollars to the cost of driving in Clark County by adding more oxygenated fuel. We had one exempt outside of - I think it was in April, so they decided to add 3 months just to be sure to cover this very well. The problem of pollution in this county and in this state is that 20% of the vehicles cause 80% of the pollution. We suggested a simple, innovative solution. We went to the automobile industry and asked them if they would cooperate with us on a general drive to bring in these cars that are no longer capable of meeting the pollution laws and put these folks into a vehicle that is in better mechanical condition that meets the pollution laws. They told us "all you have to do is the arithmetic on somebody who owns one of 20% cars that cause the problem. These folks are generally very poor but they also are poorer because of the car that they have that is constantly in need of mechanical repair". It is a two-edged sword for these folks. The automobile industry agreed - and I believe we could do it statewide - we could start a program to bring these old cars in, the car dealers would work on putting these folks into another car by "extending easy financing for people out as far as they need to pay, making their payments much lower than the cost of maintaining these bad vehicles and we will get them into mechanically fit cars that will also meet the pollution standard". We ran into difficulty the last time we tried to propose this at the County Health Department because the car buffs came out of the woodwork. We have a solution now where they can put up their money or shut up. As part of this deal we are suggesting that when the automobile dealers bring these old cars in we find a bone-yard to store the cars, leave them there for 30 days and let the car buffs come in, bid on them but then they must put up a bond that if they are going to take these old cars they must repair them to meet certain performance quality. And another part that affects the whole state is we are recommending that a law be passed (I suspect will be under the Department of Motor Vehicles (DMV)) that will not allow vehicles to enter the State of Nevada if they do not pass the pollution test - they cannot be licensed if they cannot pass the test. Because of the tremendous influx of people into Nevada that is the only way we can make any kind of sanity out of this. Making us spend another \$3 or \$4 million dollars a year to buy oxygenated fuel, which there is considerable doubt, is not the answer. I will leave an article on the health concerns and the actual effectiveness with you. I will also leave copies of "Las Vegas, The Goose That Killed The Golden Egg". We are trying to be realistic about what has happened here and in many parts of our state where we do see an unnatural growth taking place. I think you will find it interesting to read about how far our concerns go and what we are willing to do to get the political arenas attention to do something about the quality of life in Nevada.

Mr. Mahal continued, the environmental impact statement is very serious as far as we are concerned. I am not sure if you are the proper body but we actually think there should be a federal grand jury convened to investigate exactly what there is in this environmental impact statement. We find it is a fast, loose deal - this federal agency did not do things that the federal government was supposed to do.

Chairman Close thanked Mr. Mahal for his input but noted the Commission had to move to the next agenda item.

Chairman Close moved to Agenda Item V. Workshop on Cryptosporidiosis and the Las Vegas Bay

Allen Biaggi, Deputy Administrator, Nevada Division of Environmental Protection explained the remainder of the afternoon would be directed towards presentations and public comment concerning cryptosporidium and endocrine disrupter's in Las Vegas Bay, the Wash and Lake Mead in general. Prior to hearing about these very critical water

quality issues I would like to give you an over-view of what the Division is doing to try and bring all these issues together into a public forum, to address these issues in a logical and open format.

In February NDEP initiated and announced the formation of the Lake Mead Water Quality Coordination Forum. The purpose of the forum is to protect public health and preserve water quality of the Las Vegas Wash, Bay and Lake Mead:

- 1) Identify issues regarding water quality and impacts on the water supply;
- 2) Provide a forum to build consensus and to share information - that is something that is not going on right now on either the local, state or federal level;

- 3) Coordinate study efforts, provide technical updates and disseminate information to the public;

This is a very critical issue in that we have heard from a number of sources that they really don't know what studies are on-going and that the information is not being disseminated to the community.

- 4) The forum will also serve as a clearinghouse on water quality issues and provide peer review;

- 5) Enhance the public input process;

- 6) Formulate further study where it may be necessary.

Mr. Biaggi explained the forum will be comprised of a member from each participating regulatory agency who will have responsibility for representation of their respective agencies within the coordination committee.

The forum will form technical committees as appropriate to look at:

- 1) The sampling of analysis;

- 2) Cryptosporidium;

- 3) Organics and sediments; and

- 4) Endocrine disruption.

There will be a public outreach forum technical subcommittee.

NDEP initiated the forum and present forum members include:

The City of Henderson

The City of Las Vegas

The City of North Las Vegas

Clark County Department of Comprehensive Planning

Clark County Sanitation District

The Southern Nevada Water Authority

Other stakeholders invited to participate include:

The U.S. Geological Society (you will hear from Hugh Bevans today)

The U.S. Bureau of Reclamation

The U.S. Environmental Protection Agency

The U.S. Fish & Wildlife Service

National Park Service

Nevada Bureau of Health Protection Services

Nevada Division of Wildlife

Clark County Department of Parks & Recreation

Clark County Regional Flood Control District

Clark County Health and

U.S. Conservation and Natural Resource Service

A critical aspect of the forum operations and insuring that it is effective is the implementation of a Memorandum of

Understanding (MOU) between all the forum members. The Lake Mead Water Quality Forum will be comprised of any federal, state and local agency with a vested interest in Lake Mead water quality. In order to insure consistency and focus, the agencies will enter into a MOU. The forum will be responsible for issue identification, coordination and defining the process approach.

Some of the defining statements in the MOU will include:

- 1) Identification of issues concerning the Las Vegas Wash and Lake Mead - We anticipate there will be significant public input into that identification process;
- 2) Achieve a level of consensus regarding recommendations of the forum;
The process does not supplant the state, local and federal agencies responsibilities related to water supply and water quality; and
- 3) The forum is committed to resolving water quality issues within Las Vegas Wash, Bay and Lake Mead.

Mr. Biaggi noted the next meeting of the forum is scheduled for March 12, 1997. At that time we will talk about many of the forum organizational type issues. A draft MOU was mailed to all entities and we are hoping to bring this all together and provide meaningful coordination of the activities ongoing at Lake Mead.

Commissioner Gifford suggested they might include Nevada Cooperative Extension as an invited participant. They have some water quality people.

Hugh Bevans, Hydrologist with the U.S. Geological Survey - Carson City, explained he would present a briefing on the scientific investigations of the occurrence of synthetic, organic, or man-made compounds in Las Vegas Wash and Lake Mead and some of the potential effects on endocrine systems of carp studied there. Mr. Bevans explained we are going to be talking today about the occurrence and distribution of these compounds and also some of the evidence we have that indicates there has been endocrine disruption that I will define later.

Mr. Bevans displayed slides throughout his presentation.

1. A map showing the area we looked at. Not all of Lake Mead. Since this part of the study was done we have collected samples in the Virgin and Muddy River inlets and also the Colorado River inlet.

Site 1 is on Las Vegas Wash below the confluence of Flamingo Wash but above the sewage treatment plant effluent; Site 2 is near Henderson, pretty much below everything contributed by the urban area;

Sites 3, 4 and 5 are in Las Vegas Bay. Those had different depths sampled;

Site 6 is Calville Bay which use as a background site.

The Colorado River comes past that site and on down by Hoover Dam, before Las Vegas Wash effects it. We looked at the occurrence of synthetic organic compounds, these were primarily non-soluble, what they call hydrophobic compounds. They tend to be in lipid tissues in organisms or in bottom sediments. They are not very soluble but we did look in the water column using a semi-permeable membrane device, a low-density polyethylene tube with a fish lipid in it. Concentrations in the water will diffuse across this membrane and accumulate in the tube so it is kind of like an artificial organism except that it won't metabolize anything. The concentrations that build up in the tube are in proportion to what is in the water. If you have them at different sites for the same amount of time they are a good relative comparison tool. The semi-permeable membrane devices were installed on existing buoy cables for the most part in Las Vegas Bay. National Park Service divers actually retrieve a device that is in a protective cage which is cabled to the existing buoy. We also processed collected bottom sediment samples at each site. We also electro-fished in Calville Bay, in Las Vegas Bay near the inlet and we collected fish by seining in Lake Las Vegas below the Dam on the Wash. The semi-permeable membrane devices actually sample the dissolved constituents in the water so these organic compounds sampled by the semi-permeable membrane device are actually

a dissolved fraction. The red that shows up on these organic glowing compounds include degradation products of DDT, such as p,p'DDD and p,p'DDE, also degradation products of chlordane, including cis-chlordane and trans-chlordane, trans-nonachlor, also Total PCB's and some other compounds.

Mr. Bevans displayed a graph showing Las Vegas Wash and as you go down through the Bay you had generally higher numbers, the numbers at the top are the numbers of compounds so these are the total number of organochlorine compounds and the total concentration so this is a pretty crude graph. Most of the individual organochlorine compounds follow the same distribution. What you see are more compounds in general detected in Las Vegas Wash and Bay than in Calville Bay. Polycyclic aromatic hydrocarbons are a different issue - those are by-products of hydrocarbon fuels of burning or combustion. The shallow site in Calville Bay actually had more and higher concentration of those than did Las Vegas Wash and Bay. Both of these Bays have marinas in them and it is very possible that boat traffic is contributing these compounds however they can be contributed by atmospheric deposition and they can even be produced by forest fires.

Mr. Bevans continued, this slide shows compounds in bottom sediments that were detected. Again, the same general pattern presents itself from Las Vegas Wash down through Las Vegas Bay and into Calville Bay. In subsequent samples collected, bottom sediment samples from tributary washes and Flamingo Wash, we have detected some organochlorine so you have to realize that there is a reasonable amount of unnatural variation going on here.

You get a similar pattern with regards to Las Vegas Wash and Bay. You have organochlorines, the red ones are detected here - you don't have them in Calville Bay. The blues are the PAH's (polycyclic aromatic hydrocarbons) and the light blues generally decrease from Las Vegas Wash to Las Vegas Bay to Calville Bay, a background site. It is the same thing on the Phthalates, which are plasticizer's, and the darker color of blue are Phenols.

Site 3 showed the presence of p-cresol, probably a preservative that has been used for a long time, maybe from railroad ties or areas where wood was treated to be preserved.

Mr. Bevans explained we looked at another class of compounds - dioxin's and furans - you have probably heard of them, the techochlorodibenzo-p-dioxin are a pretty bad class of compounds. The really bad one which is the 2,3,7,8 techochlorodibenzo-p-dioxin that was in Times Beach, Missouri and some of those places is probably the most onerous organic chemical there is, as far as human health. We did detect these in the bottom sediments and FPND's and you can see again the concentrations are higher in Las Vegas Wash and Bay than they are in Calville Bay. The principle thing that we see from these sites and the arrow distribution of these compounds is that it is very likely that Las Vegas Wash is a source of these compounds because they are in the fat-bags, or the semi-permeable membrane devices means that these compounds are still coming down Las Vegas Wash. Some of the degradation products of DDT and some of the older organic chlorines where used as insecticide long ago probably were deposited also in the path - maybe even in higher concentrations than we are observing at this time.

Mr. Bevans explained we also electro-fished for carp and observed some concentrations of compounds in carp tissue from Las Vegas Wash, Las Vegas Bay and Calville Bay in the same general pattern - now we do generally have higher concentrates of organic chlorines - the red dots, DDT residues - the yellowish/orange dots, and the Araclors which are commercial mixtures of PCB's. Again, the same general distribution even though they are detected at all the sites in the tissues you have quite a bit higher concentrations in Las Vegas Wash and Las Vegas Bay than you do in Calville Bay.

Chairman Close asked if any of these sites were near the intake tower.

Mr. Bevans replied no, they are not. The intake tower is in the vicinity of Site 5. Southeast of that you see that island sticking out and the intake is located there. Some studies have said that Las Vegas Wash comes out and flows that direction as it goes out into the Lake - we did not look at that aspect of it so I am not really the person to speak

on that. Jim Labounty with the Bureau of Reclamation has done a lot of work looking at the plume of Las Vegas Wash. In my opinion it looks like the potential is definitely there

Mr. Bevans summarized: In general the compounds seem to be higher in number and in concentration in Las Vegas Wash and Bay than in Calville Bay leaving us to believe that the Las Vegas urban area and metropolitan area including Henderson is a source of these compounds and probably has been a source in the past. Many of these compounds that we detected have been identified by other studies as causing endocrine disruption.

Mr. Bevans displayed a list of some of the compounds identified as endocrine disrupters. The first group are soluble herbicides, also fungicides - what I am calling inorganic chlorine compounds are very persistent in the environment. They last for a long time, are very harmful and a lot of them are carcinogens, mutagens and oftentimes they will degrade into even a more stable compound that might be worse. So some of those compounds detected in the bottom sediments could have been there a long time. Also, even heavy metals, lead, cadmium and mercury can cause a problem.

Mr. Bevans explained several studies around the world have looked at endocrine disruption. One famous study in Florida was a spill of a pesticide Dicophyl, and I think it had DDT as a component of it, was so severe that alligators living in Lake Apopka could not develop normal penis's and could not consummate the sexual act with a female. Work has been done in the United Kingdom looking at effects of treated sewage effluent on male fish and vitellogenin induction. Vitellogenin is a estroprotein, triggered by estrogen and should only be in a female. It is in the blood should be going to the ovaries, making the eggs. There is evidence of endocrine disruption in the U.S. and primarily England. What happens in endocrine disruption is that these toxicants, an organic chlorine compound of some sort, resembles a hormone. It can either mimic a hormone and cause estrogen to be produced or it could block the hormone receptor. We evaluate endocrine disruption by taking a blood sample from a carp and look at levels of sex-steroid hormones - estrogen and testosterone - and also the occurrence of vitellogenin, that female egg yolk protein.

Mr. Bevans displayed a slide that showed the concentration of 11 ketotestosterone, which is testosterone, and the 17 BetaEstradiol, the estrogen. Three sites were worked and we had our background site, Calville Bay. We are assuming that those levels are pretty much what you would expect in a normal situation. The hormones in males from Las Vegas Bay, relative to Calville Bay, are suppressed - lower. The females in Las Vegas Wash have high levels of testosterone so there is some evidence of masculinization there, however this evidence is pretty nebulous. Another way to treat this is to look at ratios of estrogen and testosterone because all males have some estrogen and all females have some testosterone in their bodies and what you are depends primarily on the ratio of those hormones in your blood. Displaying a slide, Mr. Bevans reported if we look at this line, sort of a one-to-one line, a breaking line between males and females that holds up well in Calville Bay and in Las Vegas Bay but in Las Vegas Wash the ratios in the females are pretty low, almost all below that line. This is the real evidence we have that indicates there is a problem. The blue symbols are males showing vitellogenin in blood plasma samples. There should not be any vitellogenin in a male but you can see in Las Vegas Wash and Bay the males do have vitellogenin in them and in Las Vegas Bay even the females have elevated concentrations. I have been told that the one between 50 and 60 is the highest concentration that has ever been observed in a male fish.

Mr. Bevans summarized, so we see both hormones are very low in males from Las Vegas Bay and we see high testosterone in females from Las Vegas Wash - pretty normal for both at the reference sites. People are concerned about this vitellogenin in the males. Of the fish we sampled, 80% of the males in Las Vegas Wash and 100% of the males in Las Vegas Bay had vitellogenin in them. We don't really know the ramifications - this is just an indicator that something is affecting the endocrine systems of these carp and some sort of estrogenic compound is causing the

production of vitellogenin in the males. We don't know what the ramifications are to an individual as far as reproductive capability or to populations or to other fish in the Lake Mead and Las Vegas Bay, including maybe even endangered species such as the razorback sucker. We do think there is something going on.

The Lake Mead Water Quality Coordination Forum is being formed, several groups the USGS has been involved in have been meeting with the National Park Service and we will try to identify future studies that need to be done to determine if these cursory effects we are seeing are affecting individuals or populations and to try to identify which particular compound might be causing these effects. We have identified a soup of compounds but there are other compounds out there that some people think might be endocrine disrupters, including ethenoestradiol, a human birth control pill that goes through the system and it is more stable than natural estrogens so there are a lot of compounds out there and we know a lot less than we know - that is for sure.

Mr. Bevans asked for questions.

Commissioner Turnipseed asked when these samples were taken.

Mr. Bevans explained the initial bottom sediment samples taken in 1992 found some organic chlorines. The U.S. Park Service became interested and gave us some funding so our first samples on this were in 1995. So most of these samples were taken in 1995. This past summer we collected the same set of data, the SBMD's, bottom sediments and carp samples for the inlet for the Virgin, Muddy and Colorado Rivers.

Commissioner Turnipseed asked, so you don't know if any of these compounds propose a human health problem?

Mr. Bevans explained the only ones that seem to pose a potential for a human health problem - as we currently define a human health problem because as far as endocrine disruption we don't have anything to really define it and we don't even know if it is real problem for the organism right now but we know there is some indication that is occurring - in the carp tissue samples we had DDT residues which I defined as the sum of p,p'-DDD; p,p'-DDE, and p,p'- DDT exceeded some standard against protection from cancer at 1/1 million. For instance, if you ate more than 2 ounces a month you would expose yourself to a 1/1 million cancer risk. However, these were cross sectional samples of carp and not edible filets and I don't think too many people eat carp. That triggered the NDOW, in cooperation with the U.S. Park Service and others to sample stripped bass and I believe they were trying to get catfish also and they were going to cut analyze filets from them to see if there was any human risk.

Commissioner Turnipseed stated, these area are receiving waters for sewage effluent and as I understand it the two sewage treaters on Las Vegas Wash are some of the most advanced in the nation - look at the people who discharge into the Great Lakes or into the Mississippi River system and it is picked up again for drinking water, discharged back, picked up again for drinking water - that happens multiple times down that system. How do these numbers compare with carp samples anywhere else in the U.S.?

Mr. Bevans stated he did not think these numbers are particularly high compared to the Great Lakes but for some reason the vitellogenin concentration was very high in male fish and we do not know why.

Commissioner Turnipseed asked how do tests on carp in the Truckee River compare to tests on carp in the Mississippi Rivers.

Mr. Bevans reported no tissue samples on fish in the Truckee were examined. We examined blood samples from suckers taken from the Truckee above Reno at Verdi and then samples at Lockwood and Clark which are below Reno. It looked like there was a little bit of alternation in the testosterone and estrogen levels but there was no vitellogenin in the males.

Commissioner Turnipseed asked if that would change as they went down-river.

Mr. Bevans explained we sampled below Reno because that is where you get all the urban input and at Lockwood you are right below where the sewage treatment plant effluent comes in. We had detected some dioxins and furans

but I don't think we had any organic chlorine compounds. We had many more compounds in Las Vegas Wash than in the Truckee, it is definitely a different situation.

Commissioner Turnipseed asked why that would be.

Mr. Bevens replied he did not really know - I know there was some pesticides manufactured along the Wash at one time -I think Lindane might have been manufactured - and that is your Gamma BHC and we also had Alpha Beta Gamma BHC's - I think Gamma Lindane was produced. And, Las Vegas is much larger than Reno but I don't know why.

Commissioner Turnipseed asked if some of those compounds could have been there before there was such advanced treatment.

Mr. Bevens explained some of the compounds could but our semi-permeable membrane devices were actually suspended in the water column and when they are picking things up as the water flows by that indicates to me that the compounds are actively coming down Las Vegas Wash. Some of them could have been in the sediment in even higher concentrations in the past. I don't have past data to look at although I do know that fish were collected, I think by the U.S. Fish & Wildlife Service in a nationwide network at one time and I think they showed some of the concentrations were declining as far as Lindane & DDT. I don't know exactly where their sampling was but they showed these things declining through the '70s. There is still evidence this stuff is coming down off the watershed, not all that unusual, if it is in the sediments and it is in the watershed a lot of it is really stable and can stay there for a long time. I am not saying that it is actively being used but it is coming off the watershed somehow.

Commissioner Turnipseed stated carp are bottom feeders. I don't know if these compounds attach themselves to sediment load but the sediment load is something you are not going to have a lot of control over in Las Vegas. You don't know if they are actually coming out of the effluent water out of the sewage treatment plant or whether they are coming more off streets, roads and the watershed itself.

Mr. Bevens explained this past summer we put fat bags in the wasteway. There are compounds coming down the wasteway and the wasteway picks up the effluent. They are not coming out of the sewage treatment plant obviously but they are coming through the system somehow.

Commissioner Turnipseed asked - above the sewage treatment plant?

Mr. Bevens explained the wasteway just carries water from the plant into Las Vegas, I believe it carries water from both county and city plants. We put a fat bag in there. I do have some preliminary information on that but I have not gone over it with a fine-tooth comb but there are compounds in there, coming through that system.

Commissioner Turnipseed asked what is a fat bag?

Mr. Bevens explained it is just a semi-permeable membrane - essentially it actually has fish lipid, fatty materials. We all have lipid materials and it absorbs, kind of bio-accumulates. Whatever comes in contact with it will sorb to it.

Commissioner Turnipseed asked if these fat bags or semi-permeable membrane is the method used throughout the nation for this kind of study.

Mr. Bevens explained this is actually a pretty new method. They have been around 5 years or a little longer. They are really not a common thing but I think the USGS is contemplating using these at NSQAN (National Streams Quality Accounting Network) Stations. One station is located on the Colorado River below Hoover Dam. They are consistent. They were used on the Trinity River in Texas about a year before we used them here.

Commissioner Turnipseed asked if they were used in collecting the Great Lakes data and others?

Mr. Bevens replied he did not know if they had been used in the Great Lakes or not.

Commissioner Turnipseed asked what method of data collection was used before the fat bags.

Mr. Bevans replied primarily tissue samples or bottom sediments and our bottom sediment and our fat bag data collaborate. Both methods show higher concentrations in Las Vegas Bay, much lower in Calville Bay and the types and the same compounds are often detected. We did detect more compounds in the bags themselves than we did in the sediments. It is a fairly new technique.

Chairman Close called for additional questions.

There were no questions.

Informational presentation on the water quality of the Las Vegas Bay and how cryptosporidiosis impacts drinking water from the water supply intake from the Southern Nevada Water Authorities Lake Mead facilities and the impact of the Bay upon carp endocrine systems.

Peggy Roefer, Principal Microbiologist for the Southern Nevada Water System, explained Dave Hunt from the Nevada State Health Division planned to present but he had to return to Reno.

Ms. Roefer reviewed Mr. Hunt's slide presentation on Cryptosporidium in drinking water:

- * Cryptosporidium is a protozoan parasite;
- * It exists in a non-reproductive form in the environment that is very resistant to chemical or environmental insults, it does very well in reservoirs, humans and numerous warm blooded mammals and birds and the form that is infectious to humans is found in 80 different mammals;
- * It has been recognized as an agent of human disease since 1976 and as a waterborne disease since 1984;
- * Cryptosporidium gained attention with the onset of the AIDS epidemic in the 1980's. Before that time it was pretty much thought to be a common environmental contaminate;
- * The difference between Giardia and Cryptosporidium is, Giardia is larger than Cryptosporidium, they both have the same mode of transmission which is the fecal-oral route and the incubation period for Giardia is 9-22 days - for Cryptosporidium it is 2-12 days;
- * Recent outbreaks that have occurred are:
 - 1984 in Braun Station, Texas infected 2000 - a well water supply
 - 1987 in Carrollton, Georgia infected 13,000 - a surface water supply
 - 1992 in Jackson County Oregon that infected 15,000 - a surface water supply
 - 1993 in Milwaukee, Wisconsin infected 400,000 - a surface water supply and
 - 1994 in Las Vegas, Nevada infected 78 people.

There have been numerous outbreaks documented since that time. Probably the reason there were so few in the past was that we really were not looking for it.

In 1993 400,000 residents of Milwaukee fell ill. Anti-diarrhea medication was disappearing from store shelves so they knew there was a problem. 4,000 people required hospitalization and there was over 100 deaths related to the incident.

There were a combination of factors suspected in this outbreak:

- * Operational deficiencies at the treatment plants - they were using a new coagulant so the coagulation process was not working effectively
- * Tributaries to Lake Michigan were swollen by spring rains and snow runoff
- * Before and during the outbreak all federal and state drinking water regulations were met
- * Testing after the outbreak indicated the presence of oocyst.

One physician ordered a Cryptosporidium analysis, they are not normally done, and that is how they determined the cause of the outbreak.

Chairman Close asked how long does an outbreak last? There were deaths in Milwaukee, have there been deaths anywhere else from this?

Ms. Roefer explained most of the time when there is a death it is associated with a compromised person, such as what happened in Las Vegas, so the course of the disease can have varying lengths. A healthy person would normally have it for a couple of weeks. People who are immuno-compromised are often the fatalities.

Chairman Close asked how many people infected in Las Vegas died?

Mr. Roefer explained:

* There were 78 cases of cryptosporidiosis in the first quarter of 1994

* 61 were HIV infected adults, 32 had died by June 30, 1994.

As I said, more than likely all 78 of them died because of the disease.

* At least 20 of the 32 had cryptosporidiosis listed on their death certificate

* 41 had died by April 1995, including one HIV infected child.

I understand they are doing better treating this disease because they have come out with the new triple drug therapy and that has been very effective for AIDS patients.

Commissioner Jones asked how do they know if they die of AIDS or cryptosporidiosis?

Ms. Roefer replied she was not sure how they determine that because most AIDS patients have many secondary infections - toxoplasmosis, microbacterium - I guess in a case like this they know they have AIDS and then maybe whatever the secondary cause of death, like if they die of gastrointestinal illness they know that more than likely it was cryptosporidium or something similar.

Ms. Roefer explained the Center for Disease Control (CDC) conducted an epidemiological study in the City of Las Vegas and in a case control study, persons who drank un-boiled tap water were 4 times more likely to have cryptosporidiosis. Persons with CD4+, that is a T cell that is found, we all have T cells and that cell that is missing in AIDS patients and that is the one that is affected the most so they used that as an indicator of the wellness of an AIDS patient. If you have less than 200 T cells you are considered to have AIDS. The association between tap water and cryptosporidiosis was 13 times more likely so you are talking about the most ill patients that could get this infection. The conclusions reached by this report were "A cryptosporidiosis outbreak was associated with municipal drinking water, despite state-of-the-art water treatment and water quality better than that required by federal standards." This was the first outbreak that was found in water treatment with no deficiencies. No deficiencies were found by CDC or a peer review by the AWWA Research Foundation.

Ms. Roefer continued:

* Cryptosporidiosis has been reportable in Nevada since 1992. This is the reason why this outbreak this outbreak was probably detected in Las Vegas was because the Clark County Health Department noticed an increase in patients over previous years.

* The maximum recorded finished water turbidity at AMSWTF was 0.17 NTU, that is a measurement of like how many particles there are in the water, during the outbreak period. 0.5 NTU is EPA's standard.

* Infrequent testing for Cryptosporidium and low recovery rates restrict the finding of Cryptosporidium in finished water.

At the time of the outbreak the laboratory at the Southern Nevada Water System was conducting cryptosporidium testing and we were not finding it. They felt that because we were only looking at one point in time, producing 400 million gallons and maybe only collecting 1 thousand gallons, that maybe we were not looking at a large enough portion. We used the approved EPA method for the recovery rate for this analysis and the recovery efficiencies range from about 6% to about 20%, so it is very low.

Ms. Roefer explained other conclusions are:

- * Because the diagnosis of cryptosporidiosis is often not considered and because most laboratories do not routinely test for *Cryptosporidium*, cryptosporidiosis is largely under reported nationwide.

More outbreaks have been documented since these older outbreaks because people are more aware and doctors are more likely to ask for cryptosporidiosis testing if they see diarrhea in the general population.

- * *Cryptosporidium* is only one of over 100 different types of waterborne microbial contaminants.

Ms. Roefer explained the characteristics of cryptosporidiosis in humans are:

- * Morbidity/Mortality is very low for immunologically healthy individuals but very high for immunocompromised individuals (HIV/AIDS, chemotherapy, etc.)
- * The duration of the disease, if you are healthy it is 2-30 days and for immunosuppressed individuals it varies. It can vary from months to many years.

Ms. Roefer explained the problems with cryptosporidiosis are:

- * Diagnosis - laboratories do not routinely test for *Cryptosporidium* - a doctor has to go out and request a cryptosporidiosis exam
- * There is no treatment - currently there is no specific drug therapy available and the only thing you can do is to make sure you are hydrated and that you take anti-diarrheal

Ms. Roefer explained transmission of cryptosporidiosis is in many different ways:

- * Person-to-person from family household member, sexual partners, health care workers, day care center workers and attendees. Day care centers are large transmitters of giardia and crypto.
- * Animal-to-person, from your pet cat or dog, from farm animals and from laboratory animals.

I recently attended a conference and they discussed how many of these organisms could be excreted by calves, the most common type of animal to get this. They can excrete a million to a billion per gram of feces.

Commissioner Turnipseed asked if avoiding it would be a matter of just washing your hands, family members, healthcare workers, etc. or is it ever airborne?

Ms. Roefer explained it is fecal-oral so you would have to come in contact with the feces of an infected individual and get it in your mouth.

Transmission routes are:

- * Water
- * Food
- * Recreational waters
- * Animals

Immunocompromised people should be aware of how to avoid exposure. They should:

- * Avoid contaminated food or water
- * Wash hands after using toilet
- * Avoid animals which may be carriers
- * Wash hands after contact with pets
- * Practice "safe sex".

A nationwide study on the occurrence of *cryptosporidium* in water supplies revealed:

- * 51% of the surface water in this study were found to be positive and 13.4% of the finished water was found to be positive. The mean in surface water was 2.4/L and the mean in finished water was 3.3/100L.

Ms. Roefer explained the health effects of cryptosporidiosis are:

- * Diarrhea

- * Nausea
- * Abdominal cramps
- * Low grade fever
- * Vomiting
- * Asymptomatic in healthy individuals and they will never know they have the disease.

Studies have found that 1/3 of the population has had this infection and we probably are reinfected about every 5 years to maintain the antibody levels that we have.

Health effects:

- * In normally healthy adults may wax and wane and generally go away within 2 days to 2 weeks a
- * Immunosuppressed individuals may be at a higher risk of acquiring the disease and the symptoms may be more pronounced and long term.

Groups at risk from Cryptosporidium are:

- * Immunosuppressed individuals
 - HIV/AIDS patients
 - Chemotherapy patients
 - Organ transplant patients
 - Children/elderly
- * Care givers for all those individuals

Some of the things that immunocompromised people can do to protect themselves are:

- * Use submicron filters on their water supply. They found that only submicron filters appear to be protective
 - if you use a 5 micron filter that is not going to work well, these filters need to be in use before an outbreak - a lot of cities are waiting until they detect Cryptosporidium and then they are notifying the immunocompromised population of the potential. In Nevada the State Health Division advises people from the very beginning, when they find out they are immunocompromised, to use other water supplies.
- * Not all bottled water is created equal. Some bottled water might use a higher micron filtration.
- * Boiling water for 1 minute is highly effective because Cryptosporidium is very sensitive to heat.
- * Those alternatives are protective only if used 100% of the time. Most people don't think about brushing their teeth and ice - going out to dinner, that kind of thing.

The Nevada State Health Division recommends:

- * Immunocompromised individuals consider boiling their water to eliminate the risk of contracting cryptosporidiosis from their water supply.
- * These individuals should discuss with their treating physician the appropriate alternative water supply.

Ms. Roefler stated there are certain unknowns about Cryptosporidium. The method we use to detect

Cryptosporidium tells nothing about:

- * Viability - so the organisms we find, even if they are in finished water, we would not know if they could cause infection or not
- * Strain differences - some strains can be more infectious than others and some strains might give you an infection if you injected 5 oocyst and some may take 5,000 oocyst.
- * Infectious dose has been determined to be 132/L and there are actually crazy people out there who will do infectious dose studies and actually take these organisms to see when they get sick.
- * There are no infectious dose studies for immunocompromised individuals because it is a death sentence for them so there is no way you can do those kind of studies.

At concentrations within and above 10-30 oocyst/100L in finished water, the possibility of an outbreak would appear to exist and below this region outbreaks may occur but may not be detectable.

Ms. Roefer explained the information collection rule:

- * U.S. EPA has promulgated the information collection rule which they are going to use to gather data nationwide about organisms like Giardia and Cryptosporidium viruses. The method that is going to be used for Cryptosporidium and Giardia is the immunofluorescent assay method and there is a lot of limitations associated with this method.
- * Recovery efficiencies are variable according to the characteristics of the sample water, you can get much higher recoveries in a cleaner water supply than you can in dirty water supply and like I mentioned before you are not able to indicate oocyst viability and it does not address strain differences and the technique is labor intensive with a lengthy processing time requiring microscopic expertise and it is very costly. Most of the time, it takes an analyst about 4 hours just to review 1 slide.

Ms. Roefer explained the interpretation of findings:

- * If we find Cryptosporidium in the finished water a negative result does not always indicate that the water is free of Cryptosporidium for the before-mentioned reasons. You don't know what your recovery efficiency was so it should be assumed that a detected oocyst is viable infectious, since we don't know what the viability is.
- * Current analytical techniques are inadequate for determining the public health significance of positive and negative findings in water and results obtained from using this method should only be used with other water quality data to make public health decisions. CDC recommended, if you find organisms in your finished water that you go to the general population to see if there is any type of an outbreak going on because finding them does not necessarily mean that they are even viable.

Ms. Roefer explained there are two criteria we use, presumptive versus confirmed:

- * Presumptive is an organism that is of the right size and shape and it stains correctly but it has nothing inside it that would indicate that it is viable so you just know that it is of the right size and shape and then to confirm it you actually see the internal structure and you know that is an infectious organism.
- * A presumptive finding does not necessarily indicate an oocyst is not viable and infectious.

Ms. Roefer explained applications for Protozoan monitoring methods are useful in:

- * Determining occurrence
- * Evaluating treatment efficiencies
- * Risk assessment
- * Regulatory purposes
- * Specific research application.

Ms. Roefer continued, AWWA recommends a multiple barrier protection against Cryptosporidium:

- * Watershed control
- * Treatment should be optimized
- * Distribution system should have a good back-flow prevention system in place

There are different types of water treatment:

- * Conventional filtration is flocculation sedimentation filtration
- * Direct filtration is flocculation and filtration with no sedimentation and that is what we have in Las Vegas.
- * Membrane filtration which is water forced through a certain membrane of a certain pore size and the constituents that you want to remove are trapped on one side and the water goes through on the other side.

- * Disinfection is also a type of treatment.

Optimizing treatment at the plant:

- * Goal should be for the filter plant effluent to be <0.1 BTU 100% of the time
- * Disinfection using chlorine alone is insufficient
- * Ozone has been shown to be effective and the Las Vegas Water Treatment Plant will have ozone by 1999.
- * Combinations of disinfectants have been shown to have promise, like ozone chlorine, chlorinedioxide chlorine, they think that by hitting it with 2 different oxidants at 2 different times has more effect than hitting it with 1 at 1 time. Recent studies indicate the combinations of disinfectants, including chlorine followed by chloramines, inactivate Cryptosporidium oocysts effectively.

Unfortunately, this takes a long contact time so it probably would not work well in most water treatment systems.

- * The Research Foundation (AWWARF) of AWWA will spend \$4.4 million for 30 new projects in 1996
- * Projects will include numerous analytical technique research as well as water treatment and occurrence research.

A lot of work is going on about the analytical techniques in poor cities, They want to verify the best water treatment processes possible.

Ms. Roefer continued, the Information Collection Rule is:

- * A data gathering effort designed by U.S. EPA to collect occurrence and distribution information and treatment plant efficiency data
- * It is not intended to assess the public health significance of Cryptosporidium in water supplies
- * The ICR proposed requirements for monitoring microbial contaminants and disinfection by-products

A problem within the water industry is that they found that trialemethanes, by-products of chlorination, caused cancer and the pendulum swung one way - they wanted to get rid of disinfectants because they cause cancer - but now they have these microbials that can cause immediate illness so they are trying to come to a middle ground so they don't get rid of the disinfectants yet they do take into account the cancer risks.

The objectives of the ICR:

- * Understand concentrations and variations with time of the organism
- * Evaluate current assumptions regarding treatment level efficiencies
- * Develop needed levels of treatment

ICR monitoring requirements:

- * Surface water or ground water under the influence of surface water systems serving more than 100,000 people will have to:
 - Test monthly raw water for Cryptosporidium, Giardia, enteroviruses, total coliforms, fecal coliforms and E.Coli
 - Finished water sampling will be required if raw water contains >1 of these contaminants/L.

They did a performance evaluation of the method of that we are currently using and found:

- * 23% and 35% recovery for Cryptosporidium in two evaluations of spiked samples
- * They did a follow-up field spiking study where they actually spiked a filter like what we collect in the real world and they had 11% recovery in raw water and a 7% recovery in finished water - like I said, this is not a accurate method.
- * Detection limits in finished water are higher than able to find oocyst in finished water

The purpose of the Enhanced Surface Water Treatment Water Rule (ESWTR) is to:

- * Make existing SWTR more protective by controlling Cryptosporidium

Currently there are no regulations for Cryptosporidium.

The Enhanced SWTR will amend the SWTR as follows:

- * MCLG, which is the goal - the MCL - will be zero for Cryptosporidium
- * Stricter criteria for avoiding filtration such as places like New York City - they are going to have to do a lot of work in their watersheds to ensure that they don't have to filter
- * Log removal filtration requirements for Cryptosporidium.

There has been talk in the new Enhanced Service Water Treatment Rule of:

- * Up to 6-log removal/inactivation of Cryptosporidium based on raw water levels, and that is why we are doing the Information Collection Rule
- * Up to 6-log removal/inactivation of Giardia based on raw water levels
- * 2-log removal/inactivation of Cryptosporidium
- * 4-log inactivation of viruses by disinfection
- * No=change to existing SWTR.

The ESWTR Approach is a:

- * Two step approach for revising the SWTR
 - Interim ESWTR will apply to systems serving up to 10,000
 - Long term ESWTR will follow full compilation of ICR data and other research and will apply to all systems.

AWWA has also come up with The Partnership for Safe Water, a self assessment that all water utilities are suggested to implement, the treatment facility in Las Vegas has joined the partnership and what we are required to do is:

- * Address treatment uncertainties
- * Improve water quality
- * Demonstrate utility commitment to safer water

We have also implemented a Cryptosporidium Action Plan:

- * Public education
- * Surveillance and monitoring
- * Water treatment optimization and water system improvements.

Chairman Close asked for questions.

Commissioner Doppe noted one of the slides shows there are over 100 different types of water-borne contaminants and asked if we are we seeing among the worst or are there others out there that we have not been able to put a finger on yet?

Ms. Roefer explained the thing that is unique about Cryptosporidium is that it is resistant to chlorination. Most water utilities use chlorine and all the viruses and all the bacteria are sensitive to chlorination so you don't see it if you effectively treat but Cryptosporidium is different - ozone is a disinfectant but most treatment plants do not have that in place.

Commissioner Doppe asked if Giardia succumbs to chlorine.

Ms. Roefer replied yes.

Commissioner Turnipseed asked if the outbreak that happened in Las Vegas was during a time of high turbidity -

Ms. Roefer stated no -

Commissioner Turnipseed noted one of the recommendations was to serve water with less turbidity. Are you saying that Cryptosporidium is somehow tied to particles?

Ms. Roefer explained work is being done, trying to find a surrogate for Cryptosporidium. In some waters particles have been shown to correlate, like particle removal and crypto removal have been shown to correlate and in some waters they haven't been. They are still searching for a surrogate as to how to most effectively remove this parasite. It just depends upon the water. At the Las Vegas treatment facility we have been using particle counting rather than turbidity which is a much more accurate method since 1983, unheard of because most people are just now implementing it, and the reason they implemented particle counting here was because turbidity level measurements at the level we are talking about are inaccurate. At the time of the outbreak the effluent water in the treatment plant was producing 20 particles/ml which is very, very low.

Commissioner Gifford asked if there was ever a known occurrence from bottled water - you mentioned they were not all created equal.

Ms. Roefer replied she knew of only one. An outbreak occurred in Puerto Rico during a drought when a lot of people were drinking bottled water.

Chairman Close called for additional questions from the commission. There were no questions.

Chairman Close called for public comment.

Ken Mahal, Nevada Seniors Coalition explained, as I mentioned earlier we are the first people who showed a great concern about the Environmental Impact Study which had to do with that water intake and expansion at Saddle Island. I would like to refer back to the gentleman who talked about the testing - my experience with soil testing is that conditions of soil can vary within 5 feet of each other. Unless they took samples in a very close grid pattern and followed the flow of the Bay in Las Vegas Wash, which does flow into the area of Saddle Island, and took those on a very close grid all the way to Saddle Island they really have no accurate test of what the conditions are there.

These tests were taken in 1992. We have had about 120,000 new residents and approximately 150 million visitors from all over the world since then. So that isn't even a valid test to talk about in this day and age. At the growth of this valley and the fact that we are dumping treated sewage water in one end of Las Vegas Bay and pumping it out at the other end we probably ought to be testing the water conditions every year.

Mr. Mahal continued, I am not sure if you are aware that it took 2 years before our health department disclosed to us about Cryptosporidium so what is rattling through our community today that we know nothing about? I understand there is no way to kill Cryptosporidium so this is deadly. How many other types of bacteria are there in our wastewater treatment plant facility considering we have on an average of 30 million visiting people from all over the world use our sewage facility each year. Recently I was the recipient of a virus, a sudden attack on muscle tissue and joint fluid. It happened overnight but it took 4 solid months of me doing everything humanly possible to fight my way out of it - I went through 5 doctors, including talking to the Mayo Clinic to identify what was happening. Focusing on Cryptosporidium those vulnerable are those with lowered immune systems, children and seniors in particular and 60% of this population is comprised of children up to age 18 and seniors, about 600,000 people. We are very vulnerable to any outbreak of bacteria and if Cryptosporidium is out there you can bet there is something more out there that we don't know about yet.

Mr. Mahal continued, Las Vegas Wash is a back bay of Lake Mead and the sewage treatment plant dumps about 140 million gallons of wastewater treatment a day into the upper part of that back bay. Also, Las Vegas Wash is also the drainage system for practically all waste surface water drainage in the Valley. That ½ billion gallons of water a year picks up all the fecal matter, all the other contaminants in the entire Valley and what doesn't filter out - which is going to be too much because we don't have a filtering bed anymore - goes straight into Las Vegas Wash

and into Lake Mead. It is not treated. Now keep this in mind - this is the water that eventually flows, and the water leaving the wastewater treatment plant does create a flow, there is a flow on Lake Mead and the best understanding I have is that the Colorado River flows going into the Hoover Dam area more on the Arizona side which is on the far side of the Las Vegas Wash. Rivers have a tendency to eddy in bays. We do know there is a flow of the water out of the sewer treatment plant, we do know there is a flow of untreated surface water and on its way far too close, in fact in absolutely the wrong place, is Saddle Island where we take all our fresh water in. This has to be one of the most dangerous systems in the United States. Commissioner Turnipseed mentioned what happens on the Mississippi River but there you take the water out upstream, pump the effluent back in downstream but you have a good many miles of natural filtration to take care of treating the effluent that went out below the community. You don't put the effluent above where you take in the fresh water. That has got to be the dumbest thing you could ever do for any kind of good water. Even the smallest town in the world would not normally do anything like that.

Mr. Mahal continued, we dump about 140 million gallons of waste water a day and if we go ahead with the insanity to implode ourselves by growth in Las Vegas we are going to double that wastewater being dumped into the Bay. That will be almost 300 million gallons a day and God only knows how much more service water because the projection is we should grow to 2 million people. That computes to 1 billion gallons of totally polluted water going into Las Vegas Wash and on the other end is the fresh water intake that now is programmed to pick up about 430 million gallons a day and that will go to more like 1.1 billion gallons of fresh water. If we are going to be taking that much water out dumping that much pollution in we will just have a sucking machine going and that is not a very good idea.

Mr. Mahal continued, in case you did not read it in the paper, we had well over 1 million gallons (that we know of) of raw sewage dumped into Las Vegas Wash last year from the wastewater treatment plant. I suspect one of these days we will learn that even more was dumped. If the screw-up at the water plant is any indication of what kind of a screw-up we will have in the wastewater treatment plant when they expand we can probably expect 10 million gallons of raw sewage to go into the area of our fresh water supply.

What happens when 50 million more visitors and 2 million people live here? The intent to "grow at any cost" will double or quadruple the problems that we can't handle today and we are out of attainment in everything. Our sewer plant and our fresh water plant are practically holding hands with each other and scrubbing each others back. No matter whether we grow another 100,000 people or not, the only way this system will work is that the fresh water intake should be moved entirely out of any area that could possibly be contaminated by human waste. In conclusion I will say that we expect, and have a right to expect, no less than 100% pure water. I recommend you help us stop the expansion of the Saddle Island fresh water intake.

Dr. Larry Paulson, private citizen but also representing the Nevada Seniors Coalition on some of the water related issues in Las Vegas Valley, stated he has been studying Lake Mead since 1971 and has been through 3 major controversies in regards to wastewater discharges into Lake Mead. The first one was the controversy over the algae growth in the inner Las Vegas Bay and the solution to that problem was to build a \$90 million dollar advanced wastewater treatment plant to remove the phosphorus from the wastewater thereby allowing us to maximize the amount of wastewater put back into the Lake so we can get return-flow credit which allows us then to draw more water from the Colorado River system. I sampled Lake Mead 5 years after we implemented the wastewater treatment plant in 1986 and the algae bloom out there was worse than it had ever been. There was an actual increase, not decrease in the amount of algae in Las Vegas Bay. In the late 1980's and early 1990's the wastewater treatment plants were upgraded again - this time to take care of the ammonia problem. Nitrogen had been controlling the growth of algae in that part of the lake for many years. You add more nitrogen, the algae grows. You

can't get the phosphorus concentration low enough to limit the growth of algae and prevent an algae problem in that part of the lake. You can't get the phosphorus concentration low enough to limit the growth of algae and prevent an algae problem in that part of the lake. I, Charles Goldman from the University of California, Joe Schapiro from the University of Minnesota and Alex Horn from the University of California, Berkeley said it - some of the top scientists in the world have been in here and made recommendations in regards to that problem. Yet we continue to rely upon technology - wastewater treatment! I have heard it here today that water treatment and wastewater treatment are state-of-the-art. State-of-the-art is not good enough - 32 people died. Ms. Roefer did not point this out but there were 11 immunocompetent children that were infected in the 1994 outbreak that occurred over a period of several months and I suspect there were a lot more people infected than were reported. If you look at the number of infections in Milwaukee, 400 thousand, versus deaths and compare that to what we had here something is wrong with the ratio, or we had a lot more cases than were reported.

Dr. Paulson stated it is time we face the reality of the situation that we have. We cannot continue to dump wastewater into Las Vegas Bay 6 miles upstream of the drinking water intakes, 2 now, without paying serious consequences. 31 million visitors from all over the world urinate and defecate in our sanitary facilities and every bacteria, parasite and virus known to man goes through this community.

Dr. Paulson reported, in the last 20 years of working here, while we have been sitting here talking about how we can handle these problems with wastewater treatment we've allowed the most valuable resource we have in the valley, namely about 2,000 acres of wetlands, to erode into Las Vegas Bay. There is nothing left there now but a big ditch of muddy water and on this silt and muddy water is a substrate that harbors a lot of these pathogenic organisms. I don't understand why we let it happen and why we don't get busy and restore it. I hear talk of ozone and more state-of-the-art treatment but I tell you diseases and bugs develop faster than we can develop treatment for those diseases and bugs. We are constantly trying to catch up. Instead of putting so much wastewater back into the lake why don't we reuse some of that wastewater in the valley to irrigate golf courses, parks, etc. and we would not have to divert chlorinated drinking water for this purpose so we have less wastewater to treat going into the lake and we have to treat less drinking water coming back. Somebody said "we will lose our return-flow credit". Well, putting wastewater back into Lake Mead is not reuse. This is what we need to start doing in this valley but it won't happen as long as we have policy based strictly on the concept of putting as much wastewater back into the lake as we possibly can.

Mr. Paulson stated, this Commission will be faced with making a decision. When the dischargers come in and ask for more volume of water to discharge back into the Lake, when they and tell us they cannot comply with the standards, this Commission is going to have to sit back and say "alright - are we going to let this, the third controversy in 20 years develop - or are we going to encourage these people to start looking at alternate ways of dealing with the wastewater".

Mr. Paulson asked to make one more point. Some of you may remember when I fertilized 20,000 acres in the Overton Arm in 1987. I was very unpopular and made no friends except with a few fishermen. Shortly after that time I recommended that we try to do everything we could to spread wastewater out in Lake Mead which is an enormous body of water with tremendous dilution capability. The nutrients then become a benefit by feeding the fish - not a problem like we have now. Lake Mead can't take all the wastewater in one place. We wanted to put diffuser systems in combined with wetland treatment. There are many things we can do but we have to make a fundamental change in water policy and start thinking about reusing water instead of discharging it.

Kay Brothers, Director of Resources for the Southern Nevada Water Authority, complimented the NDEP for establishing the Forum. As you can see from what you have heard today there is a real need to look at a lot of these

issues and address these concerns for the community. In regards to what Mr. Paulson just said about reusing the wastewater, the City of Las Vegas in cooperation with the Las Vegas Valley Water District, is in the design phase of a satellite wastewater treatment facility to be located on the northwest part of the valley that will treat wastewater to be used on 8-10 golf courses and various parks in the northwest part of the valley. There are 2 other such facilities being designed for other areas of the valley so we have heard, and we realize, that reuse of wastewater for irrigation is something that has to be done. The Forum will probably look at the use of wetlands and we agree wetlands should be evaluated again.

Doug Karafa, Clark County Sanitation District, noted he and Mr. Paulson have had a lot of conversations over the years. As Ms. Brothers stated, we are in the reuse business. We have been serving water to Nevada Power and to golf courses for about 20 years. In the summer months we serve about 10 million gallons the 60 - 70 million gallons that we process per day. We agree with Mr. Paulson, it is a good idea.

Mr. Karafa stated there is a lot of talk about water quality in Las Vegas Bay getting worse. The fact is for a couple constituents of concern the Bay was listed as impaired for a long time based on Chlorophyll A, a indicator of algae in the lake, and also ammonia. This year, for the first time, we were de-listed as an impaired water. In the last 3 year the water quality has improved due to improvements to wastewater quality in place. There is a new class of stuff, endocrine disrupters etc. and a lot of questions still to be answered on that level.

Mr. Karafa continued, there is a lot of conjecture that the treated wastewater flows that go by the wash go by the intake. I have not seen any studies that actually say that. No one has really tracked it that far because it is about 6 miles away. The work done by Labounty has no sampling points by that intake - I would not try to tell you that it is not possible but to date no one actually has any data that says it really happens.

Chairman Close asked if the plume from the Bay to its outer reaches is tracked periodically.

Mr. Karafa replied the Sanitation District and the other dischargers are required in their permits to do monitoring out in the lake. We looked at the plume as has Dr. Jim Labounty with the Bureau of Reclamation. Generally the plume is tracked by the kind of activity of the water that relates to TDS. Seasonally it varies with the depth of the lake but it runs out of sight about the time it gets to the mouth of the Bay. It gets tough to track because you are then trying to track very small increments of TDS to see if the plume still exists. Once you get past the mouth of the Bay it is pretty speculative to say where it goes. Some people think it goes across to the west side of the Lake or to the Arizona side and gets into the main river channel and some think it goes by the intake. No one really has a handle on that data yet.

Larry Basil, Outside Environmental Counsel for the City of Las Vegas explained they track the plume to about the middle of Las Vegas Bay where it seems to disappear. We have never seen the plume at our station in Boulder Basin. We are looking at putting in stations between to give us a better handle but there is no evidence that we know of that the plume is out in Boulder Basin.

Larry Paulson noted over the years we sampled there were numerous times we made measurements at the intersection across Saddle Island to Black Island where we picked up a conductivity peak at a particular depth at different times of the year. Larry Basil is saying they don't have a station between the middle of Las Vegas Bay and Boulder Bay, a distance of about 4 miles, so obviously they are not going to see it at Saddle Island if they don't make the measurement there. I have had problems with the dischargers doing their own monitoring. I am concerned some of the sampling that is done may not necessarily be representative of the conditions we have in the lake. I have tried to get copies of the reports that the City of Las Vegas and Clark County are doing for some time. I want to look at the chlorophyll data Doug Karafa talk about and plot it out myself to see whether or not there has been a real change in the chlorophyll. No chlorophyll data were reported at all in the first 2 quarters of 1996. This is a

fundamental problem, a conflict of interest, that we have with the water quality monitoring being done by the agencies that are discharging the wastewater. That is one of the first things this Forum should change. I also have a problem with the Forum - it is comprised of the dischargers. How a representative from the public? There is list of agencies but not a single representative from the public. We're not stupid or ignorant! A lot of this stuff boils down to good common sense. It has been known since the days of the cave man that you "don't crap in camp"! Instead of doing more studies to defend the fact that waste water is going into the lake, why don't we sit down and say "how can we solve this problem - how can we continue to provide water for this valley and wastewater treatment that will protect Lake Mead without polluting the system?" That is what we need to do!

Larry Basil explained we track the plume by measuring conduciveness. We go about half-way out in the bay plus Boulder Basin, which we have used as a background station. At our station in Boulder Basin we have not seen the kind of conductivity blip Larry Paulson has been talking about. It is true, we don't have a station now at the mouth of Las Vegas Bay. I would like to talk about what the plume might be. When Las Vegas Wash flows into Las Vegas Bay, especially at the beginning, the plume has an identity that we all can see and recognize. At the same time, it is mixing into the Bay and as it goes out into the Bay it becomes less distinct until it disappears. I have seen some of the data from the station at the mouth of Las Vegas Bay and sometimes you do see a little in the conduciveness, questions then arise of whether you are seeing a squiggle that is Las Vegas Bay related or that is Colorado River related because you also see squiggles from the Colorado River that take various shapes and sizes. No one has set up all the stations in the right place. In order to set out the right kind of sampling program to answer a question someone has to ask the question and all these years people have been asking questions about the inner bay where we set up sampling stations. In the past we recommended additional sampling stations when we thought they were necessary. We now have a new question and we are going to respond to it.

Chairman Close called for additional comments.

Ellen Smith, Las Vegas citizen, reported she came down with Cryptosporidium from the middle of March to the middle of April in 1996. I have consulted doctors at least 6 times because it recurred through the year - it goes away and then comes back. My health has never been the same. I am really strong and extremely healthy. I sell real estate and I noticed through the industry in mortgage bankers, title people, we all got this hacking cold - it was not the flu -it turned out it was not a virus - we don't know what it was and I suppose that is what made me susceptible to Cryptosporidium. I am a very clean person, I wash my hands and I do drink water. Finally in the 4th of this, as I was recovering on my own, they did do a test. They did not discover Cryptosporidium but I know I had this. It was a form of dysentery, had a very distinctive odor, and I became so weakened. I could not leave my bedroom - 10 times an hour - strange colors and strange stuff. It is a dreadful disease and I hope you can do something for this. It is nothing people in a polite society would ever talk about so I think there are many people who have had this. My nurse neighbor said that she does not know why it is not headline news because there are people in the hospital dying all the time.

Ms. Smith continued, after I started to feel better I made a study of it. The obituaries in the Las Vegas newspapers revealed many people, 35, 40, 55, died in March, April and May, 1996. Very unusual to see that many young people dying. Also, I read a small piece buried in the paper last summer that I believe said 350 people died in that April period. I was shocked that it had never been reported until in the summer.

Chairman Close called for additional comments. No comments were made. Chairman Close thanked everyone for their comments and testimony and called the public hearing to a close.

Chairman Close called for discussion by the Commission.

Chairman Close requested Mr. Biaggi to keep the Commission informed on the activities of the newly formed

Forum, its findings and progress.

Commissioner Molini asked when the water quality standards in Southern Nevada would be revisited.

Mr. Dodgion explained staff was in the process of reviewing the water quality data and by the end of the year it would be presented to the Commission.

Commissioner Molini asked Mr. Dodgion if he expected the Forum to have greater insights into these issues by that time?

Mr. Biaggi explained the Forum will identify the issues raised today, seek the resources necessary to further evaluate them, come up with data to either support or deny those problems and solutions will be identified.

Commissioner Molini stated at the current time, other than addressing things like TDS, there are really no standards to address these things that exist today.

Mr. Biaggi explained for some of the things there are toxic standards but there are not water quality standards for many of the things USGS looks for in their study. There are no water quality standards for those individual compounds and they are going to have to be handled on a case-by-case basis. They are not necessarily permitting issues per se, and they can be looked at from a wider management perspective such as the wetlands issue Mr. Paulson mentioned. I think there is a venue to address these types of things in this Forum for the Commission and the overall role of the Division and the other participating agencies.

Chairman Close called for additional questions. There were no questions or comments.

Chairman Close adjourned the Commission meeting at 3:30 p.m.

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Hearing Date: March 6, 1997

Location: Clark County Commission Chambers, Las Vegas

Subject: Regulatory Hearing

#	Item	Item Description	Reference Petition #	Accepted Yes/No
1	1 Page Document	Proposed Amendment to NAC 486A.160	96019	YES
2	2 Page Letter	Letter from David C. O'Neil Southwest Gas Corp.	96019	YES
3	8 Page Overhead	Presentation by David Hunt, P.E.,M.S. Nevada State Health Division	Water Quality Workshop	YES
4	Publication USGS Water Resources Investigations Report 96-4266	Report <i>Synthetic Organic Compounds and Carp Endocrinology and Histolty in Las Vegas Wash and Las Vegas and Callville Bays of Lake Mead, Nevada, 1992 and 1995</i>	Water Quality Workshop	YES
5	2 Page Letter	L. Kenneth Mahal, President Nevada Seniors Coalition 8/18/97 (96)	Public Comment	YES
6	1 Page Letter	L. Kenneth Mahal, President Nevada Seniors Coalition 11/4/96	Public Comment	YES